Waller County, Texas
Invitation for Bid

Reconstruction of Mathis Road
for Waller County Engineering
BID 26-009

SUBMIT BIDS TO:

Waller County
County Judge's Office
836 Austin Street, Suite 4300
Hempstead, TX 77445

SUBMIT NO LATER THAN:

Thursday, July 9, 2026
1:00 PM (CST)

ENVELOPE TO BE LABELED:

Bid 26-009
Mathis Road

ALL BIDS MUST BE RECEIVED AND TIME/DATE STAMPED BY THE COUNTY JUDGE'S OFICE OF WALLER COUNTY ON OR BEFORE THE SPECIFIED TIME/DATE STATED ABOVE.
BIDS RECEIVED AS REQUIRED WILL BE OPENED AND PUBLICLY READ AFTER DUE DATE.
BIDS RECEIVED AFTER THE SPECIFIED TIME WILL BE RETURNED UNOPENED.

Results will not be given by phone. Results will be provided to bidder in writing after Commissioners Court award. Requests for information must be in writing and directed to Jaime Kovar, Purchasing Director, j.kovar@wallercounty.us

Vendor Responsibilities:

- Download and complete any addendums posted on the Waller County website.
- Submit response in accordance with requirements stated in the document.
- DO NOT submit responses via email, as they will not be accepted.

Invitation for Bids

SECTION 1. GENERAL REQUIREMENTS

1.1 Entire Document: Read this entire document carefully. Follow all instructions. You are responsible for fulfilling all requirements and specifications. Be sure you understand them.

1.2 Applicability: General Requirements apply to all advertised Invitations for Bid; however, these may be superseded, in whole or in part, by the scope, special requirements, specifications, special specifications or other data contained herein.

1.3 Governing Law: Bidder is advised that these requirements shall be fully governed by the laws of the State of Texas and that Waller County may request and rely on advice, decisions and opinions of the Attorney General of Texas and the Waller County District Attorney concerning any portion of these requirements.

1.4 Bid Form Completion: Complete one (1) bid form, sign, and return with completed submittal to County Judge's Office of Waller County. An authorized representative of the Bidder must sign the Contract Sheet. The contract will be binding only when approved by the Waller County Commissioners Court, signed by the County Judge of Waller County and a purchase order authorizing the item(s) desired has been issued. The use of corrective fluid is not acceptable and may result in the disqualification of bid. If an error is made, the bidder must draw a line through the error and initial each change.

If an Excel pricing form is included and/or posted on the County's website amongst this Invitation for Bid, the vendor must download, complete, and save the Excel file (not a PDF of the Excel file) of the pricing form on a flash drive. The Excel file on the flash drive must be downloadable by the Purchasing Director in order to copy and paste the Bidder's pricing to the County's tabulation. The flash drive must be labeled and included in the same sealed envelope with the respondent's completed Bid along with a printed copy of the pricing form completed by the vendor.

1.5 Bid Returns: Bidders must return a completed Bid Package in a sealed envelope to the County Judge's Office of Waller County, 836 Austin Street, Suite 4300, Hempstead, TX 77445, no later than 1:00 P.M. (CST) on the date specified. The Bid Package is the set of documents outlining the requirements and details of the Project that is provided by the County to potential Bidders, and the complete, properly signed Bid. Late bids will not be accepted.

1.6 Addenda: No interpretation of the meaning of the drawings, specifications or other bid documents will be made to any bidder orally. All requests for such interpretations must be made in writing addressed to Jaime Kovar, Procurement Director by email at: J.Kovar@wallercounty.us. Any and all interpretations and any supplemental instructions will be in the form of written addenda to the contract documents which will be posted on Waller County's website. Addenda will ONLY be issued by the Waller County Procurement Director. It is the sole responsibility of each bidder to insure receipt of any and all addenda. All addenda issued will become part of the Contract Documents. Bidders must sign and include any and all issued addenda in the returned bid package. **The deadline for submission of questions and/or clarification is no later than July 1, 2026, at 10:00 AM (CST).** Requests received after the deadline will not be responded to due to the time constraints of this bid process.

1.7 References: All Bidders must submit, WITH BID, at least three (3) references from clients for whom a project similar to that specified herein has been successfully accomplished. References must include clients' name, contact person, and telephone number.

1.8 Bid Bond: All Bidders must submit, WITH BID, a cashier's check or certified check for at least five percent (5%) of the total bid price, payable to the order of Waller County, or a Bid Bond in the same amount issued by a surety, acceptable to Waller County, authorized to do business in the State of Texas, as a guarantee that the Bidder will do the work described herein at the rates stated herein. The cashier's check or certified check submitted by an unsuccessful Bidder will be returned only after a written request to do so has been received by the Procurement Director.

1.9 Material Safety Data Sheets: Under the "Hazardous Communication Act", commonly known as the "Texas Right to Know Act", a Bidder must provide to Waller County and using departments, with each delivery, material safety data sheets, which are, applicable to hazardous substances defined in the Act. Bidders are obligated to maintain a current, updated file in Waller County. Failure of the Bidder to maintain such a file will be cause to reject any bid applying thereto.

1.10 Pricing: Prices for all goods and/or services shall be firm for the duration of the Contract and shall be stated on the bid sheet. The Bid submitted to the County shall be inclusive of all costs necessary to complete the Project. No price changes, additions, or subsequent qualifications will be honored during the course of the Contract, unless made in accordance with the Contract's General Terms and Conditions. All prices must be written in ink or typewritten.

1.11 Term Contracts: If the Contract is intended to cover a specific time period, said time will be given in the specifications under Scope.

1.12 Recycled Materials: Pursuant to Texas Health and Safety Code § 361.426, Waller County encourages the use of products made of recycled materials and shall give preference in purchasing to products made of recycled materials if the products meet applicable specifications as to quantity and quality. Waller County will be the sole judge in determining product preference application.

1.13 Evaluation: Evaluation shall be used as a determinant as to which bid items or services are the most efficient and/or most economical for Waller County. It shall be based on all factors which have a bearing on price and performance of the items in the user environment. All Bids are subject to tabulation by the Procurement Director and recommendation to Waller County Commissioners Court. Compliance with all bid requirements, delivery, and needs of the using department are considerations in evaluating bids. Pricing is NOT the only criteria in determining the lowest responsible bidder, or for making a recommendation. The Waller County Procurement Director reserves the right to contact any Bidder, at any time, to clarify, verify, or request information with regard to any Bid.

1.14 Disqualification of Bidder: Upon signing the Contract Sheet, a Bidder offering to provide supplies, materials, services, or equipment to Waller County certifies that the Bidder has not violated the antitrust laws of this state codified in section 15.01, et seq., Business & Commerce Code, or the federal antitrust laws, and has not communicated directly or indirectly the bid made to any competitor or any other person engaged in such line of

business. Any and all Bids may be rejected if Waller County believes that collusion exists among the Bidders. Bids in which the prices appear to be unbalanced may be rejected. If multiple Bids are submitted by a Bidder and after the Bids are opened, one of the Bids is withdrawn, the result will be that all of the Bids submitted by that Bidder will be withdrawn; however, nothing herein prohibits a vendor from submitting multiple Bids for different products or services.

1.15 Awards: Waller County reserves the right to award the Contract to the lowest responsible bidder in accordance with the laws of the State of Texas, to waive any formality or irregularity, to make awards to more than one Bidder, and to reject any or all Bids.

1.16 Contract Obligation: A Bid does not become binding upon the Bidder until it is accepted by official action of the Waller County Commissioners Court, and a Contract does not become binding on the County of the Bidders until it is approved by official action of the Waller County Commissioners Court and executed by the County Judge or another person authorized by the Waller County Commissioners Court. Department heads are not authorized to sign agreements for Waller County. Binding agreements shall remain in effect until all products and/or services covered by this purchase have been satisfactorily delivered and accepted.

SECTION 2. PRE-BID CONFERENCE

2.1 Pre-Bid Conference: A pre-bid conference will be conducted on **Thursday, June 25, 2026 at 10:00 AM** (CST). The pre-bid conference will be held at the Waller County Judge's Office located in the County Courthouse at 836 Austin Street, Suite 4300, Hempstead, Texas 77445. All bidders are encouraged to attend.

SECTION 3. SCOPE

3.1 Scope: It is the intent of Waller County to contract with one (1) vendor for all materials, supplies, equipment, tools, services, labor, and supervision necessary to complete the reconstruction of Mathis Road from 1800' south of the intersection at Betka Road on the north end to the intersection at Rochen Road at the South end in Waller County.

Proposed scope improvements include maintaining the existing 2-lane roadway with open ditch drainage within the existing right-of-way (ROW) which spans 70-ft to 80-ft. It is proposed to reconstruct the 3-inch asphalt pavement, 8-inch black base course, 8-inch lime and or fly ash stabilized subgrade with flex base shoulders in accordance with County guidelines. The roadway classification is a local road and is being designed for 30mph.

Proposed typical sections include a 24' wide road for the Mathis Road segment, with 2' flex base berms. For Berry Lane and Penick Road, proposed typical sections include a 22' wide roadway with 2' flex base berms.

The scope of work includes mill and overlay of both the Penick Road and Mathis Road bridges. Apart from this, the two bridges are to be maintained as is.

The scope of work also includes a drainage study which focuses on providing enough conveyance in the ditches and culverts. The open ditch drainage is to be maintained, and regrading of existing ditches are proposed throughout the corridor.

Traffic control, permanent signing and striping, and storm water pollution prevention are

also included as part of the scope for this project.

SECTION 4. ESTIMATED BUDGET AND PROJECT COMPLETION DATE

4.1 Estimated Budget: $5,300,000

4.2 Estimated Completion Date: Two hundred forty-nine (249) calendar days, beginning on the issuance date of the Notice to Proceed.

SECTION 5. ENCLOSURE

5.1 Enclosure #1: Specifications and Plans

SECTION 6. PRICING

6.1 Excel Bid Pricing Form: Bidders are required to obtain and complete the Excel Bid Pricing Form on the Waller County website and return to County Judge's Office, as stated in Section 1.4 and 1.5.

SECTION 7. PERFORMANCE AND PAYMENT BONDS

7.1 Bonds Required: The Bidder must provide to the County a payment bond and performance bond, each in the amount of 100% of the total Contract Price. Bonds must be submitted to the Procurement Director within ten (10) calendar days after receipt of notification of bid award. Such bonds shall be executed by a solvent surety company duly authorized to do business and licensed in the State of Texas to issue surety bonds with a Best Rating of A/VII or better. Waller County reserves the right to accept or reject any surety company proposed by the Contractor. In the event Waller County rejects the proposed surety company, the Contractor will be afforded five (5) additional days to submit the required bonds issued by a surety company acceptable to Waller County.

An attorney-in-fact or agent who signs a bid bond, performance bond, or payment bond must file with each bond a certified and effectively dated copy of his or her power of attorney or authority to act.

SECTION 8. REQUIRED FORMS

8.1 Required Forms: All Bidders are required to complete and return with their Bids the following forms:

a. Electronic Excel file of Pricing Form on flash drive and printed hard copy

b. Bidder's Business Information Sheet

c. Contract Special Terms & Conditions

d. Contract Sheet

e. W-9 Form

f. Texas Ethics Commission Form 1295:

i. Effective January 1, 2016 all contracts executed by Commissioners Court, regardless of the dollar amount, will require completion of Form 1295 "Certificate of Interested Parties", as required by Texas Government Code §2252.908. All vendors submitting a response to a formal Bid, RFP, SOQ or any contracts, contract amendments, renewals or change orders are

required to complete the Form 1295 online through the State of Texas Ethics Commission website. Please visit: https://www.ethics.state.tx.us/filinginfo/1295/.

ii. On-line instructions:

a. Name of governmental entity is to read: Waller County, Texas.

b. Identification number used by the governmental entity is: B26-009.

c. Description is the title of the solicitation: Mathis Road.

SECTION 9. AWARD

9.1 Award: The contract will be awarded to the overall lowest responsible bidder.

Bidder's Business Information Sheet

By submitting a Bid, Bidder is seeking to enter into a legal contract with the County. As such, a Bidder must be an individual or a legal business entity capable of entering into a binding contract. Bidders must completely and accurately provide the information requested below or your Bid may be deemed non-responsive.

Name of Company:

_____

Type of Business (please check one):

- ☐ Individual/Sole Proprietor
- ☐ Corporation
- ☐ Limited Liability Company
- ☐ Partnership
- ☐ Other

If other, please specify _____

State of Incorporation (if applicable): _____

Federal Employer Identification Number: _____

Principal Place of Business Address: _____

_____.

Name and Address for Notices to be Sent Under Contract General Terms and Conditions Section 18.19:

_____

_____.

List any other names the Company uses, or is known by (dba, aka, etc.):

_____

_____.

_____ _____

Company Name Date

_____ _____

Signature of Authorized Company Official Printed Name

_____

Email address

Contract General Terms and Conditions

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SECTION 1. DEFINTIONS

1.1 Addendum: Written instruments issued by Waller County which clarify, correct, or change the bidding requirements or the Contract Documents prior to the Due Date.

1.2 Authorized Representative: The Waller County Engineer.

1.3 Bid: A complete, properly signed response to an Invitation for Bid that, if accepted, would bind the Bidder to perform the resultant contract.

1.4 Bidder: A person, firm, or entity that submits a Bid in response to an Invitation for Bid.

1.5 Bid Documents: The advertisement or Invitation for Bids, Bid form, the Price Sheet, the Contract Sheet, Specifications and Plans, Geotechnical Data, the Special Terms and Conditions Form, the Contract General Terms and Conditions, Bidder's Business Information Sheet, Form, and Addenda.

1.6 Calendar Day: Any day of the week, no days being excepted.

1.7 Construction Site: The area designated by the County where construction work on the Project is carried out.

1.8 Contract: The binding legal agreement between the County and the Contractor. The Contract represents the entire and integrated agreement between the County and the Contractor for performance of the Work, as evidenced by the Contract Documents.

1.9 Contract Price: the moneys payable by the County to the Contractor for completion of the Work in accordance with the Contract Documents.

1.10 Contract Sheet: the form provided in the Bid Documents.

1.11 Contract Time: The number of days allowed for completion of the Work as defined by the Contract Sheet. When any period is referred to in days, it will be computed to exclude the first and last day of such period. A day of twenty-four hours measured from midnight to the next midnight will constitute a day.

1.12 Contractor: The individual, firm, corporation, or other business entity with whom the County has entered into the Contract for the performance of the Work.

1.13 County: Waller County, Texas, a political subdivision of the State of Texas.

1.14 Design Engineer: Firm: LJA Engineering
Houston, Texas

1.15 Design Engineer Representative: The authorized representative of the Design Engineer who may be assigned to the site or any part thereof.

1.16 Drawings: Those portions of the Contract Documents which are graphic representations of the scope, extent and character of the Work to be furnished and performed by Contractor, and which have been approved by the County. Drawings may include plans, elevations, sections, details, schedules, and diagrams. Shop Drawings are not included in the definitions of Drawings.

1.17 Due Date: The date and time specified for receipt of Bids.

1.18 Final Completion: The point in time when the County determines that all Work has been completed and final payment to Contractor will be made in accordance with the Contract Documents.

1.19 Invitation for Bid ("IFB"): A solicitation requesting pricing for a specified good or service which has been advertised for Bid in a newspaper.

1.20 Minor Change: A written change in the Work that is ordered by the Authorized Representative, that does not change the Contract Price or Contract Time, and is consistent with the scope of the Contract.

1.21 Notice to Proceed: A written notice given by the Authorized Representative of the County to Contractor identifying the date on which the Work will commence, and on which Contractor shall start to perform Contractor's obligations under the Contract Documents.

1.22 Project: the Reconstruction of Mathis Road as specified in the Contract Documents.

1.23 Schedule of Values: an itemized list of each activity and all materials and labor required to complete the Project, and the corresponding values of each. When summed up, the Schedule of Values shall equal the total Contract Price.

1.24 Shop Drawings: All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor as required by the Contract Documents.

1.25 Specifications and Plans: Those portions of the Contract Documents consisting of written technical descriptions as applied to the Work, which set forth to Contractor, in detail, the requirements which must be met by all materials, equipment, construction systems, standards, workmanship, equipment, and services in order to render a completed and useful project.

1.26 Subcontractor: An individual, firm, corporation, or other business entity having a direct contract with Contractor for the performance of a portion of the Work under the Contract.

1.27 Substantial Completion: The stage in the progress of the Work when the Work, or designated portion thereof, is sufficiently complete in accordance with the Contract Documents so that the County can occupy or utilize the Work for its intended use, as evidenced by a Certificate of Substantial Completion approved by the County.

1.28 Superintendent: The representative of Contractor authorized in writing to receive and fulfill instructions from the Authorized Representative, and who shall supervise and direct construction of the Work.

1.29 Supplier: An individual or entity that furnishes materials or equipment to be incorporated in the Work by the Contractor or any Subcontractor.

1.30 Transfer Date: the date on which the care, custody, and control of the Project passes to Waller County.

1.31 Work: The entire completed construction, or the various separately identifiable parts thereof, required to be furnished under the Contract Documents. It includes the procurement, delivery, and proper construction and/or installation of all materials, facilities, and associated appurtenances necessary to fulfill the winning Bidder's obligations under the Contract, including the coordination and administration of all

services necessary for the Contractor, its agents, and/or subcontractors to fulfill Contractor's obligations under the Contract.

SECTION 2. CONTRACT DOCUMENTS

2.1 The Contract Documents: The Contract Documents are composed of the following:

a. Contract Sheet
b. Invitation for Bid
c. Bid Form
d. Specifications and Plans
e. Contract Special Terms and Conditions, if any
f. Contract General Terms and Conditions
g. Bidder's Business Information Sheet
h. Forms

2.2 Intent: The purpose of the Contract Documents is to include all information necessary for the proper execution and timely completion of the Work by Contractor. The Contractor will execute the Work described in and reasonably inferable from the Contract Documents as necessary to produce the results indicated by the Contract Documents. The Contract Documents are complimentary, and what is required by one shall be as binding as if required by all.

2.3 Exclusion of Professional Services: Contractor shall neither perform nor provide professional services as defined by Texas Government Code Chapter 2254 under this Contract.

2.4 Order of Precedence: In the event of a conflict between any of the Contract Documents, they shall be given precedence in the order provided in Section 2.1.

2.5 Interpretation: In the event of any dispute concerning the terms of the Contract Documents, the County's interpretation shall govern.

SECTION 3. PROJECT DURATION

3.1 Project Timeline: Bidder agrees to complete all work required by the Contract Documents as indicated on the Contract Sheet after issuance of a purchase order by the County, and issuance of a Notice to Proceed by the Authorized Representative. The Contract Time will begin to run on the date the Notice to Proceed is issued.

3.2 Liquidated Damages: The Contractor or its surety shall be liable for liquidated damages for the failure of the Contractor to timely complete the Work or any portion thereof within the Contract Time. The Contractor shall pay the County one thousand five hundred dollars ($1,500) per day for each calendar day beyond the scheduled completion date specified herein, unless the contract time has been adjusted by a Change Order. If the Contractor pays liquidated damages to the County, the County will place the Contractor on one (1) year probation. The County will issue written notice to the Contractor of the probation, and the one (1) year probation period will begin to run on the date of issuance of the written notice. If the Contractor becomes responsible for liquidated damages on any other project

during the probation period, the Contractor will be disqualified from any County work for a period of two (2) years, beginning on the issuance date of the written notice of the one (1) year probation period.

SECTION 4. CONTRACTOR'S RESPONSIBILITY FOR WORK

4.1 Preconstruction Work: Contractor shall perform the following preconstruction work upon written request from the County:

a. Cause Contractor's personnel to meet with the County and the Design Engineer to discuss the status of the Project;

b. Review drawings and specifications with the Design Engineer to determine the Project's compliance with applicable codes; and

c. Submit to the Road & Bridge Department a Schedule of Values for all of the Work, subdivided into component parts in sufficient detail to serve as the basis for progress payments during construction. At a minimum, the Schedule of Values must be broken out by trade and split between materials and labor. Prices will be deemed to include an appropriate amount of overhead and profit applicable to each item of Work. The Schedule of Values must be prepared in such form and supported by such data to substantiate its accuracy as the Road & Bridge Department may require.

4.2 Construction Work: Contractor shall perform the following construction work:

a. All preparatory work at the Construction Site identified herein, including but not limited to: soil and concrete testing, demolition of improvements existing at the construction site, and any other actions necessary for construction to begin in compliance with all laws and regulations pertaining to the Project, including those related to archaeological and environmental requirements.

b. Construct and install the Project on the construction site in accordance with the Contract Documents.

c. Furnish all materials, supplies, equipment, tools, labor, supervision, utilities, transportation, and other materials and services necessary to complete the Project.

4.3 Reporting and Resolving Discrepancies: If, during the performance of the Work, the Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provisions of any such law or regulation applicable to the performance of the Work or of any such standard, specification, manual or code, or instructions of any Supplier, Contractor shall not proceed with the Work affected thereby until an amendment or supplement to the Contract Documents has been issued. The Contractor shall be liable to the County for failure to report any such conflict, error, ambiguity, or discrepancy of which Contractor knew or reasonable should have known.

4.4 Reporting Design Defects: The Contractor shall provide written disclosure to the County if the Contractor learns of a defect, inaccuracy, inadequacy, or insufficiency in the Contract Documents, plans, specifications, or other design documents that the Contractor discovers, or reasonably should have discovered by the use of ordinary diligence. The Contractor shall provide written disclosure within a reasonable time of learning of the defect, but not later

than two (2) days after the discovery. Contractor shall not proceed with the Work affected thereby until instructed in writing by the Authorized Representative. If the Contractor fails to disclose a defect under this section of which the Contractor knew or reasonably should have known, the Contractor shall be liable to the County for the consequences of the defect(s) that result from the failure to disclose.

4.5 Minor Changes in the Work: Waller County acknowledges that in order to accomplish the efficient completion of the Project within the Contract Time, the Contractor may submit requests for Minor Changes in writing to the Authorized Representative in stages for approval or consent. Upon any request for a Minor Change submitted by the Contractor for review and approval, the Authorized Representative shall review the same, and shall diligently and promptly give the Contractor written notice of the Authorized Representative's approval or disapproval. The written approval or disapproval will be provided to the Contractor no later than fourteen (14) calendar days after receipt of the written request for Minor Change . If disapproved, the Authorized Representative's written decision shall set forth in detail all reasons for the disapproval. The Authorized Representative's right to disapprove any Minor Change shall be limited to the elements that: (a) do not conform substantially to matters previously approved, (b) have not been previously presented and approved, and that the Contractor fails to demonstrate is reasonably necessary for completion of the Project, or (c) are violations of this Contract or applicable laws and regulations.

4.6 Change Orders: A Change Order is required for all changes in the Project that require (a) an adjustment in the Contract Price, (b) an adjustment in the Contract Time, or (c) a material change in the overall scope or function of the Project. Change Orders may only be approved by the Waller County Commissioners Court. A Change Order must be approved before Contractor commences such change. Such procedure shall be the exclusive means to effect such changes in the Project.

a. If at any time Waller County desires to make any change in the Project requiring the issuance of a Change Order, Waller County will provide the Contractor with a written notice describing the change. Within a reasonable period of time after receiving such notice, the Contractor shall provide Waller County with a Change Order that describes the proposed change, and proposes changes, if any, to the Contract Price, the Schedule of Values, and the final completion date. Once the Contractor has provided a Change Order, the County will provide a written approval or disapproval of the Change Order not later than the 28th calendar day after receipt of the proposed Change Order. Upon approval of the Change Order, the Contractor shall perform the work in accordance with such Change Order. All work performed pursuant to a Change Order shall be performed in accordance with the terms of this Contract.

b. No action, acquiescence, or inaction by Waller County or any representative of Waller County shall be construed to be a waiver of requirements set forth in this Contract in regard to Change Orders, or as a ratification of a violation of such requirements. All acts in violation of this provision shall be considered void.

c. A Change Order is only effective if it is approved by the Waller County Commissioners Court, and signed by an authorized representative of both the County and the Contractor.

d. The Contract Price and the Schedule of Values shall be adjusted only as a result of a Change Order requiring such adjustment. Any extra work performed without a proper Change Order shall be considered voluntary and not subject to additional compensation.

4.7 Review and Approval of Changes: If the County disapproves of a Minor Change or Change Order, the Contractor shall have the right to alter such Minor Change or proposed Change Order to the satisfaction of the County, and resubmit the matter for evaluation. Any resubmission shall be subject to review and approval by the County.

a. The County and the Contractor shall attempt in good faith to resolve any disputes concerning a Minor Change or Change Order expeditiously, so as not to delay the completion of the Project in accordance with this Contract.

b. Waller County recognizes the importance of expeditious action upon all matters submitted to the County for review and approval, and of expeditious response to those aspects of the Project which require approval of governmental authorities having jurisdiction thereover. Waller County shall exercise its rights of review and approval hereunder with due diligence, reasonableness, and good faith. The County shall use its reasonable efforts to expedite any required review of the Project or other matters by any governmental authority.

4.8 Site Access: Prior to the Transfer Date, the County and the Contractor shall have uninterrupted access to the construction site. Subsequent to the Transfer Date, Waller County will permit the Contractor, the Design Engineer, and their representatives and subcontractors to enter upon the Project at times reasonably necessary to complete the punch list items.

4.9 Applicable Laws and Regulations: Contractor shall perform its obligations pursuant to this Contract in accordance with all applicable federal, state, and local statutes, ordinances laws, regulations, and executive, administrative and judicial orders. The Contractor may be entitled to an extension of time if changes in said applicable laws and regulations cause any delay in the performance of the Contractor's obligations under this Contract.

4.10 Environmental Regulations: Contractor shall plan and execute its operations in compliance with all applicable Federal, state, and local laws and regulations concerning control and abatement of water pollution and prevention and control of air pollution.

4.11 Material Safety Data Sheets: Contractor shall be responsible for providing and coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the site in accordance with laws and regulations.

4.12 Permits: Contractor shall obtain, possess, and pay for all permits, licenses, and fees required to complete the Project. The permits shall be in the name of Waller County.

4.13 Familiarity with Project: The Contractor represents and agrees that it is thoroughly familiar with all phases of the Project, all matters and conditions that may affect the construction

and successful completion of the Project, and had the opportunity to conduct any and all additional inquiry, tests, and investigations that it deemed necessary and proper. Contractor further certifies that it has: (a) visited and examined the construction site, the obstacles thereon, if any, and observed all conditions that may affect the Project (b) determined the nature and location of the Project, (c) understands the general and local conditions which affect the Project, and (d) investigated the labor and materials market as they are relevant to the Project. Contractor represents and agrees that it is able to successfully complete the Project for the Contract Price.

4.14 Contractor: Contractor specifically represents that is has carefully examined the plans, the geotechnical report, if any, and the site of the proposed Work and is thoroughly familiar with all of the conditions surrounding construction of the Project, having had the opportunity to conduct any and all additional inquiry, tests, and investigation that he or she deems necessary and proper. The Contractor acknowledges the receipt of the geotechnical report, if any, and agrees that the report, while it is an accurate record of the geotechnical conditions at the boring locations, is not a guarantee of specific site conditions which may vary between boring locations.

4.15 Duty to Notify of Unforeseen Conditions: The Contractor must notify the County in writing as soon as reasonably possible, but no later than three (3) calendar days, if unforeseen conditions are encountered at the site which are i) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents, or ii) unknown physical conditions of an unusual nature, that differ materially from those normally encountered in the type of work being performed under this Contract. Contractor may not disturb the conditions until the County conducts an investigation. The Authorized Representative and the Design Engineer will promptly investigate such conditions. If it is determined that such conditions differ materially and cause an increase or decrease in the Contractor's cost of or time required for performance of any part of the Work, the Authorized Representative will recommend an equitable adjustment in the Contract Price, Contract Time, or both. If it determined that such conditions are not materially different from those indicated in the Contract Documents, the Authorized Representative will notify the Contractor in writing of such findings, and the Contract will not be adjusted.

4.16 Contractor's General Warranty: The Contractor warrants and guarantees to the County that all work performed on the Project will conform to the Contract Documents, be performed in a good and workmanlike manner in accordance with the Contract Documents, and will not be defective. The Contractor shall promptly correct defective work and damage that results from the Contractor's failure to exercise reasonable care in performing the Work, or from the Contractor's failure to perform the Work in a good and workmanlike manner. The Contractor shall use qualified, careful, and efficient contractors, subcontractors, employees, and workers in conformity with the provisions of this Contract. This Section 4.16 shall survive the termination or expiration of the Contract.

4.17 Contractor's Guarantee: The Contractor warrants and guarantees to the County that: (a) the Contractor possesses the skill and knowledge ordinarily possessed by well-informed members of its trade or profession, (b) the Contractor will use its best efforts to ensure that the services provided under this Contract are performed, delivered, and conducted in accordance with the best professional standards and in accordance with industry standards, and (c) the Contractor is fully experienced and properly qualified, equipped, organized and

financed to successfully complete the Project. The services and materials provided by the Contractor to Waller County will conform to the representations contained in this Contract, including all attachments, schedules, and exhibits.

4.18 No Limitation on Implied Warranties: The Contractor shall not limit or exclude any implied warranties, and shall extend such warranties for the goods or services provided under this Contract.

4.19 Work Performed Contrary to Law or Regulations: If Contractor performs any Work knowing or having reason to know that it is contrary to laws or regulations, the Contractor shall bear all claims, costs, losses, and damages arising therefrom.

4.20 Warranties and Guarantees Cumulative: The Contractor's warranties and guarantees shall be cumulative, deemed consistent and not in conflict, are intended to be given full force and effect, and are to be interpreted expansively to give the County the broadest warranty protection. The Contractor's obligation to perform and complete the Work in a good and workmanlike manner in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

a. Observations by County or the Design Engineer, or any of their officials, officers, representatives, employees, or agents;

b. Recommendation of any payment by County, or any of its officials, officers, representatives, employees, or agents;

c. The issuance of a certificate of Substantial Completion or any payment by the County to the Contractor under the Contract Documents;

d. Use or occupancy of the Project or any part thereof by the County or the public;

e. Any acceptance by the County, or failure to do so;

f. Any review of a Shop Drawing or sample submittal;

g. Any inspection, test, or approval by other; or

h. Any correction by the County of defective work.

4.21 Contractor's Personnel. Contractor shall maintain a work force adequate to accomplish the Work within the Contract Time. Contractor shall employ only competent, orderly, personnel for the Project that are skilled in the performance of the type of Work required under this Contract.

4.22 Contractor's Supervision: Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. The Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall be responsible to see that the completed Work complies accurately with the Contract Documents.

4.23 Contractor's Superintendent: Beginning on the execution of the Contract, and continuing until Final Completion, the Contractor shall identify and maintain a competent and

qualified superintendent who shall be authorized to act on behalf of the Contractor and with whom Waller County may consult at all reasonable times. The superintendent must be an employee of the Contractor, unless such requirement is waived in writing by the Authorized Representative. The superintendent shall not be transferred from the Project without the County's consent, which shall not be unreasonably withheld or delayed. Notwithstanding the foregoing, the superintendent is not required to be assigned solely to the Project, and shall be entitled to spend reasonable time working on matters unrelated to the Project, so long as such work on other matters does not render the superintendent unavailable to the Project or to Waller County. If the superintendent is transferred from the Project, Waller County shall have the right to approve the replacement superintendent. The County's approval shall not be unreasonably withheld or delayed. The Contractor shall replace the superintendent upon the County's request in the event that the superintendent is unable to perform to the County's satisfaction.

4.24 Effect of Obligation: The obligation to maintain the superintendent and work force shall not be construed to: (a) preclude the promotion of any of Contractor's employees assigned to the Project, or (b) give rise to any liability of the Contractor in the event an employee assigned to the Project leaves the Contractor's employment, or (c) imply that the County has an employer/employee relationship with Contractor, or any of its employees .

4.25 Wages: Contractor shall pay workers on the Project in accordance with Section 15, and not less than the wage rates, including fringe benefits, as published by the Department of Labor for Building Construction and Heavy and Highway Trades, as applicable.

4.26 Subcontractors: The Contractor shall not employ any Subcontractor, Supplier, or other person or organization, whether initially or as a substitute, against whom the County may have a reasonable objection. Contractor shall not substitute any Subcontractor, person, or organization that has been accepted by the County, unless the substitute has been accepted in writing by the County. No acceptance by the County of any Subcontractor, Supplier, or other person or organization shall constitute a waiver of any right of the County to reject defective work. Contractor shall provide County with a complete list of any Subcontractors it intends to use on the Project. In the event that Subcontractors are used on the Project, the Subcontractor must agree to be bound by the terms of this Contract.

4.27 Responsibility for Subcontractors: The Contractor shall be fully responsible to the County for all acts and omissions of the Subcontractors, Suppliers, and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with Contractor just as Contractor is responsible for the Contractor's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier, or other person or organization any contractual relationship between the County and any such Subcontractor, Supplier, or other person or organization, nor shall it create any obligation on the part of the County to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other person or organization except as may otherwise be required by laws and regulations.

4.28 Construction Site Order: The Contractor shall at all times maintain good discipline and order on the construction site. If Contractor becomes aware that any employee, subcontractor, or subcontractor's employee is incompetent, disorderly, abusive, disobedient, has knowingly violated safety regulations, has possessed any firearm in

contravention of applicable Texas law, has possessed or was under the influence of alcohol or drugs on the job, or has violated any federal, state, or local law, rule, or ordinance. Contractor shall immediately remove such worker or representative, including an officer or owner of Contractor or any Subcontractor from performing work on the Project, and may not subsequently allow such worker or representative at the construction site without the County's written consent. Contractor, the Design Engineer, Subcontractors, and workers or employees shall comply with all applicable health, safety, and loss prevention rules of applicable governmental authorities. The Contractor shall at all times enforce strict discipline and good order among its employees and workers, and shall not employ on the Project any unfit person or anyone not skilled in the work assigned to him. Waller County may, upon thirty (30) days written notice to the Contractor and without cause, require the removal of any individual from performing work on the Project.

4.29 Construction Site Conditions: Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the site and land and areas identified by the Designated Representative, and other land and areas permitted by laws and regulations, right-of-way, permits, and easements. Contractor shall not unreasonably encumber the premises with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas, resulting from the performance of the Work. During the progress of the Work, and on a daily basis, Contractor shall keep the premises free from accumulations of waste materials, rubbish, and other debris resulting from the Work. At the completion of the Work, Contractor shall remove all waste materials, rubbish, and debris from and about the premises, as well as all tools, appliances, construction equipment and machinery, and surplus materials. Contractor shall leave the site clean and ready for use by County at Substantial Completion of the Work. Contractor shall restore to original condition all property not designated for alteration by the Contract Documents. If the Contractor fails to clean up at the completion of the Work, the County may do so, and charge the cost thereof to the Contractor.

4.30 Inspection: The Project and all parts thereof shall be subject to inspection from time to time by inspectors designated by Waller County. No such inspections shall relieve the Contractor of any of its obligations hereunder. Neither failure to inspect, nor failure to discover defects or reject any of the work as not in accordance with the Contract Documents shall be construed to imply an acceptance of such work or to relieve the Contractor of any of its obligations hereunder. Waller County agrees that its right of inspection shall be used reasonably and in a timely manner so as not to delay orderly completion of the Project.

4.31 Safety: The Contractor shall be responsible for initiating, maintain, and supervising all safety precautions and programs in connection with performing work on the Project. The Contractor shall comply with all applicable laws and regulations of any public body having jurisdiction for the safety of persons or property, or to protect them from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. The Contractor shall comply with all federal, state, and local occupational hazard and safety standards, codes and regulations applicable in the jurisdiction where the Project is located. The Contractor shall include the substance of this clause in its entirety in all subcontracts for any work to be performed at the construction site.

4.32 Responsibility for Property: Contractor shall notify owners of adjacent property and of underground facilities, and utility owners when performance of work on the Project may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury, or loss to any materials or equipment used in furtherance of the Project, whether stored on or off site, and to any other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and underground facilities not designated for removal, relocation, or replacement in the course of construction that is caused, directly or indirectly, in whole or in part, by the Contractor, Subcontractor, or any personal or entity directly or indirectly employed by them shall be remedied by Contractor. Contractor is solely responsible for the location and protection of any and all public utility lines and utility customer service lines in the Work area. "Public utility lines" means the utility distribution and supply system, and "utility customer service lines" means the utility lines connecting customers to the utility distribution and collection system. Generally, existing utility customer service line connections are not shown on the Drawings. The Contractor shall exercise due care to locate, mark, uncover, and otherwise protect all such lines in the construction zone and any of Contractor's work or storage areas, and to notify appropriate authorities of relevant activity in the construction zone. Contractor's responsibility for the location and protection of utilities is primary and nondelegable.

4.33 Protection Against Risks: The Contractor shall take all necessary and adequate precautions to protect against conditions created during the progress of the Project which involve a risk of bodily harm or death to persons, or a risk of damage or loss to any property. The Contractor shall regularly inspect all work, materials, and equipment to discover and determine any such conditions, and shall be responsible for discovery, determination, and correction of any such conditions.

4.34 Hazardous Materials: Contractor shall be responsible for any hazardous materials brought to the site by the Contractor, Subcontractor, Suppliers, or anyone else for whom Contract is responsible, and shall be responsible for the use, storage, and remediation of any such hazardous materials. The Contractor shall immediately notify the County of any hazardous material uncovered or revealed at the Construction Site which was not shown, indicated, or identified in the Contract Documents to be within the scope of the Work and which may present a substantial danger to persons or property exposed thereto in connection with the Work at the site. The Contractor shall immediately notify the Authorized Representative of any suspected hazardous materials encountered before or during the performance of the Work, and shall take all necessary precautions to avoid further disturbance of the materials.

4.35 Contractor's Duties Continue Until Final Acceptance: Contractor's duties and responsibilities for safety and protection of the Work and property shall continue until such time as the Project is completed, and the County has issued a written notice indicating final acceptance of the completed Project.

4.36 No Excessive Loading: Contractor shall no load, nor permit any part of any structure to be loaded in any manner that will endanger the structure. The Contractor shall not subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

4.37 Texas Department of Transportation: the Contractor shall perform the Work in accordance with any applicable rules, regulations, and standards adopted by the Texas Department of Transportation.

4.38 Meetings and Cooperation: Contractor shall meet with the County or its Authorized Representative on an as needed basis to ensure the Work is performed satisfactorily. The Contractor shall cooperate at all times with the County, and other contractors providing services to the County to maintain maximum security and efficiency.

4.39 Equipment and Materials: Except as expressly provided otherwise, the Contractor shall furnish and pay for all construction, transportation, installation, materials, labor, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and any other equipment, facilities, and incidentals required for the furnishing, performance, testing, start-up, and completion of the Project within the time specified, except for professional services as defined by Texas Government Code Chapter 2254. Such equipment and facilities shall be of good quality and new (including new products made of recycled materials, pursuant to Texas Health and Safety Code § 361.426), and fit for the uses intended. Defective items shall be removed from the construction site promptly and at the Contractor's expense. If requested by the Authorized Representative, Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment used for the Project. All materials and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, unless otherwise provided in the Contract Documents. Any Supplier or manufacturer furnishing these items shall be experienced in the design and construction of such materials, and shall be an established supplier of the items and materials. The Contractor shall schedule its other operations so as not to interfere with its duty to timely furnish the necessary equipment, materials facilities, and personnel to operate the same at the times necessary for the orderly and timely completion of the Project. Title to materials delivered to the Construction Site or a staging area will pass to the County upon delivery without the necessity for further documentation. Risk of loss will not pass to the County until Final Acceptance.

4.40 Defective Work: The County and the Design Engineer may disapprove or reject Work with either believes to be defective, or believes will not produce a completed Project that conforms to the Contract Documents, or will jeopardize the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. The Contract shall bear all losses, damages, costs, and claims related to remedying defective work.

4.41 Uncovering Work: The Contractor shall uncover the Work in the following circumstances:

a. If any Work, including the work of Subcontractors or others, that is to be inspected, tested, or approved is covered by the Contractor or Subcontractor without written concurrence of the Authorized Representative, or if any Work is covered contrary to the written request of the Authorized Representative, it must, if requested by the Authorized Representative, be uncovered and recovered at the Contractor’s expense.

b. If the Authorized Representative considers it necessary or advisable that covered Work be observed, inspected, or tested, the Contractor shall uncover, expose, or

otherwise mark available for observation, inspection, or testing that portion of the Work in question, furnishing all necessary labor, material, and equipment. If it is found that such Work is defective, the Contractor shall pay all claims, costs, losses, and damages caused by, arising out of, or resulting from such uncovering, exposure, observation, inspection, and testing and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and the County shall be entitled to an appropriate decrease in the Contract Amount, and may make claim therefore. If such Work is not found to be defective, the Contractor may be allowed an increase in the Contract Price, or an extension of the Contract Time, or both, which is directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction.

4.42 Contractor's Remedy for Delay, Disruption, or Hindrance. Contractor and County contemplate that Contractor's performance may be delayed, disrupted, or interfered with by unanticipated causes including but not limited to the following:

a. Severe and unavoidable natural disasters such as fires, floods, epidemics and earthquakes;

b. Abnormal weather conditions;

c. Acts or failures to act of the County, third party utility owners, or other third party entities; and

d. Acts of war or terrorism.

Contractor and the County agree Contractor's sole remedy for delays in performance of the Work, whether or not such delays are foreseeable, is an extension of the Contract Time, except as provided in Section 4.43. Contractor shall receive no compensation or damages of any kind for delays, disruptions, or hindrances to the Work. The County's exercise of any of its rights or remedies under the Contract including, without limitation, ordering changes in the Work or directing suspension, rescheduling, or correction of the Work, regardless of the extent or frequency of the County's exercise of such rights or remedies, shall not be construed as intentional interference with Contractor's performance of the Work. The sole remedy of Contractor for any delay, disruption, or hindrance caused by the County's exercise of any of its rights or remedies under the Contract Documents shall be strictly limited to an extension of the Contract Time, except as expressly provided in Section 4.43.

In no event shall the Contractor be entitled to any compensation or recovery of any special damages in connection with any delays, disruptions, or hindrances, including without limitation: consequential damages, lost opportunity costs, impact damages, indirect damages, exemplary damages, compensation for unjust enrichment, attorney's fees or other similar damages or costs.

4.43 Direct and Unavoidable Costs: In the event the County is the sole cause of a delay, disruption, or hindrance by acts or omissions that constitute fraud, intentional misrepresentation, gross negligence, or intentional interference with Contractor's performance of the Work, Contractor may receive compensation for direct and unavoidable

extra costs only to the extent such acts continue after Contractor notifies the County in writing of such conduct. The direct and unavoidable costs must be specifically proved, and caused solely by the proven wrong. When such extra compensation is claimed, a written statement thereof shall be presented by Contractor to the County, and if found by the County to be correct, shall be approved.

4.44 No Authority to Act of Behalf of County: The Contractor agrees and understands that neither it, nor any of its agents, employees, or Subcontractors may act in the name of the County unless specifically authorized in writing by the County.

SECTION 5. PREVAILING WAGES

5.1 Required Compliance with Texas Government Code Chapter 2258: This Project is subject to the prevailing wage rate requirements of Chapter 2258 of the Texas Government Code, and the Davis-Bacon Act Wage Determination # TX20260299 provided below. All persons employed by Contractor shall be compensated at not less than the rates shown below. Contractor shall keep records of each worker employed by the Contractor or a subcontractor in the construction of the Project, including each worker's name, occupation, and the actual per diem wage paid to each worker. Said records shall be open at all reasonable hours to inspection by the County and its officers and agents. If Contractor pays any worker less than the below stated rates at any time, the Contractor shall pay Waller County sixty dollars ($60.00) per day for each worker employed by the Contractor for the provision of services described herein for each calendar day or part of the day that the worker is paid less than the below stated rates. Contractors may also visit www.wdol.gov/dba.aspx.

General Decision Number: TX20260299 05/18/2026

Superseded General Decision Number: TX20250299

State: Texas

Construction Type: Highway

Counties: Austin, Brazoria, Chambers, Fort Bend, Galveston, Hardin, Harris, Jefferson, Liberty, Montgomery, Orange, San Jacinto and Waller Counties in Texas.

Modification Number	Publication Date
0	01/02/2026
1	05/18/2026

SATX2025-013 11/15/2023

	Rates	Fringes
Asphalt Distributor Operator	$23.26	0.00
Asphalt Paving Machine Operator	$22.67	0.00
Asphalt Raker	$20.41	0.00
Broom or Sweeper Operator	$17.63	0.00
Concrete Finisher, Paving and Structures	$20.79	0.00
Concrete Pavement Finishing Machine Operator	$22.18	0.00
Concrete Paving, Curing, Float Texturing Machine		

Operator	$22.62	0.00
Concrete Saw Operator	$21.57	0.00
Crane Operator, Hydraulic 80 tons or less	$24.75	0.00
Crane Operator, Lattice Boom 80 tons or less	$25.74	0.00
Crane Operator, Lattice Boom over 80 tons	$23.85	0.00
Crawler Tractor Operator	$20.33	0.00
Electrician	$31.46	0.00
Excavator Operator, 50,000 pounds or less	$21.53	0.00
Excavator Operator, Over 50,000 pounds	$22.24	0.00
Flagger	$16.63	0.00
Form Builder/Setter, Structures	$19.93	0.00
Form Setter, Paving & Curb	$19.32	0.00
Foundation Drill Operator, Crawler Mounted	$22.25	0.00
Foundation Drill Operator, Truck Mounted	$26.04	0.00
Front End Loader Operator, 3CY or less	$19.72	0.00
Front End Loader Operator, Over 3CY	$20.34	0.00
Laborer, Common	$17.12	0.00
Laborer, Utility	$19.11	0.00
Loader/Backhoe Operator	$21.37	0.00
Mechanic	$23.38	0.00
Milling Machine Operator	$21.65	0.00
Motor Grader Operator, Fine Grade	$23.91	0.00
Motor Grader Operator, Rough	$21.20	0.00
Off Road Hauler	$17.12	0.00
Painter, Structures	$26.40	0.00
Pavement Marking Machine Operator	$17.12	0.00
Piledriver	$21.48	0.00
Pipelayer	$20.03	0.00
Reinforcing Steel Worker	$22.34	0.00
Roller Operator, Asphalt	$19.79	0.00
Roller Operator, Other	$18.93	0.00
Servicer	$20.33	0.00
Spreader Box Operator	$17.84	0.00
Structural Steel Worker	$22.64	0.00
Truck Driver Lowboy Float	$25.94	0.00
Truck Driver, Single Axle	$21.93	0.00
Truck Driver, Single or Tandem Axle Dump Truck	$18.60	0.00
Truck Driver, Tandem Axle Tractor with Semi Trailer	$20.17	0.00
Welder	$20.97	0.00
Work Zone Barricade Servicer	$17.37	0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/agencies/whd/government-contracts.

Note: Executive Order 13658 generally applies to contracts subject to the Davis-Bacon Act that were awarded on or between January 1, 2015 and January 29, 2022, and that have not been renewed or extended on or after January 30, 2022. Executive Order 13658 does not apply to contracts subject only to the Davis-Bacon Related Acts regardless of when they were awarded. If a contract is subject to Executive Order 13658, the contractor must pay all covered workers at least $13.65 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract from May 11, 2026 through December 31, 2026. The applicable Executive Order minimum wage rate will be adjusted annually. Additional information on contractor requirements and worder protections under Executive Order 13658 is available at www.dol.gov/whd/gov-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2024, in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing this classification and rate.

Union Average Rate Identifiers

Thes UAVG identifier indicates that no single majority rate prevailed for those classifications; but that, 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The "SU" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFLA2022-007 6/27/2024. SU indicates that the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6 (c) (1).

State Adopted Rate Identifiers

The "SA" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Main. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the SA identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* a survey underlying a wage determination
* an existing published wage determination
* an initial WHD letter setting forth a position on a wage determination matter
* an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to da-visbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

SECTION 6. PAYMENT

6.1 Payment: Waller County shall pay the Contractor according to the contract in current funds for the Contractor's performance, as stated herein, after issuance of a Notice to Proceed and a purchase order issued by the Waller County Procurement Director. In no event will Contractor be paid the entire contract price prior to beginning work, or prior to completion of the work.

6.2 Retainage: The County shall withhold a ten percent (10%) retainage from each Application for Payment, which shall be paid subject to Sections 6.6 and 6.7.

6.3 Applications for Payment: Waller County shall make progress payments to the Contractor as provided below.

a. The Contractor shall submit Applications for Payment to the Waller County Treasurer's Office, 836 Austin Street, Suite 2200, Hempstead, Texas 77445 in a form acceptable to the County. Each Application for Payment must be filled out and signed by the Contractor, and cover the Work that is completed as of the date of the Application and be accompanied by sufficient supporting documentation.

b. With each Application for Payment, the Contractor must submit an affidavit certifying that Contractor has paid in full any bills submitted to the Contractor for labor, material and expendable equipment that Contractor used in the performance of Work or the provision of services under the Contract. The certifying affidavit must be provided to the County before the applicable Application for Payment will be approved for payment.

c. Applications for Payment shall not include requests for payment related to changes in the Work which have not been authorized through a Change Order.

d. Applications for Payment shall not include requests for payment of amounts that the Contractor does not intend to pay to a Subcontractor or Supplier because of a dispute or other reason.

e. The period covered by each Application for Payment shall be one calendar month beginning on the first day of the month, and ending on the last day of the month. A complete and accurate Application for Payment must be submitted to the County Treasurer not later than the 15th day of the month following the month in which the work was performed.

f. The Application for Payment shall indicate the percentage of completion of each portion of the Project as of the end of the period covered by the application for payment.

g. Subject to the provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

i. Take that portion of the contract sum properly allocable to the completed Project less retainage of ten percent (10%).

ii. Add that portion of the contract sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved by Waller County, suitably stored off the site at a location agreed upon in writing), less retainage of ten percent (10%).

iii. Subtract the aggregate of previous payments made by Waller County.

h. Payment will be made by the County in accordance with Texas Government Code, Chapter 2251.

6.4 Final Payment: If, upon Final Completion and on the basis of observation of the Work during construction, final inspection, and review of the final Application for Payment and accompanying documentation as required by the Contract Documents, the Authorized Representative is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, there are no outstanding claims, and punch list items have been completed, the Authorized Representative will recommend the final Application for Payment for approval to the Waller County Commissioners Court. Final payment shall constitute the entire unpaid, undisputed balance of the Contract Price. The Contractor may make application for final payment following the procedure for progress payments after the Contractor has complied with the requirements of Section 6.3 to the County's satisfaction, and delivered the following documents:

a. Affidavit by Contractor certifying the payment of all debts and claims;

b. The Record Documents identified in Section 13;

c. Consent to surety, if any, to final payment. If surety is not provided, complete and legally effective releases or waivers that are satisfactory to the County of all claims arising out of or filed in connection with the Work;

d. Certificate evidencing that any applicable requirement for insurance will remain in force after final payment and through the warranty period;

e. Proof of performance bond extension through warranty period, if a performance bond was required; and

f. Any other documentation called for in the Contract Documents.

Final payment is considered to have taken place when the Contractor, or any of its representatives negotiates the County's final payment check, whether labeled final or not, for cash or deposits check in any financial institution for its monetary return.

6.5 Review of Applications for Payment and Payment: The Authorized Representative will, within seven (7) calendar days after receipt of each Application for Payment, either indicate a recommendation for payment and forward the Application for processing by the County, or return the Application to the Contractor indicating the Authorized Representative's reasons for not recommending payment. If the Authorized Representative does not recommend payment, the Contractor shall make the necessary corrections and resubmit the Application.

a. By recommending payment, the Authorized Representative does not represent that:

i. Exhaustive or continuous on-site inspections have been made to check the quality or quantity of the Work;

ii. Examination has been made to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Price; or

iii. Contractor's construction means, methods, techniques, sequences, or procedures have been reviewed.

6.6 County's Right to Withhold Payment: The County may withhold or nullify the whole or part of any payment to such extent as the County deems necessary in the event that:

a. Defective work is not remedied as required by the County and in the time frame required by the County;

b. A third party files a claim or there is reasonable evidence indicating probable filing of such claims;

c. Contractor fails to make payments properly to Subcontractors for labor, materials, or equipment;

d. There is reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Amount;

e. There is damage to the County or another contractor;

f. There is reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;

g. The Contractor fails to submit a schedule of values in accordance with the Contract Documents;

h. The Contractor fails to maintain a record of changes on drawings and documents;

i. The Contractor fails to maintain weekly payroll reports and, as applicable, provide copies of reports in a timely manner upon request of the County;

j. The Contractor fails to submit monthly subcontractor reports;

k. Contractor neglects or unsatisfactorily prosecutes of the Work, including fails to clean up; or

l. The Contractor fails to comply with any provision of the Contract Documents.

6.7 Reason for Withholding Payment Removed: When the above reasons for withholding payment are removed, the Contractor shall resubmit an Application for Payment for the value of the Work performed. Payment will be made in accordance with Texas Government Code Chapter 2251.

6.8 Payment to Subcontractors when Payment Withheld: Subcontractors may request Partial Payment when the County withholds payment of an invoice to the Contractor for any reason listed in Section 6.6. If the payment is withheld by the County, the Contractor shall notify all affected Subcontractors within two (2) working days of notice that payment is being withheld. Upon notification, Subcontractors may submit a formal written request for Partial Payment to the Contractor and the County. If directed by the County, the Contractor shall within three (3) working days resubmit to the County an invoice for the same period that includes only work performed by the requesting Subcontractors during this period. The County will review this resubmitted invoice. Upon receipt of payment for the resubmitted invoice, the Contractor shall pay the Subcontractor within ten (10) calendar days.

SECTION 7. COMPLETION, TRANSER, AND ACCEPTANCE

7.1 Substantial Completion: When the Contractor considers that the Work, or a portion thereof which the County agrees to accept separately, is substantially complete, the Contractor shall notify the Authorized Representative, and request a determination as to whether the Work, or a designated portion thereof is substantially complete. If the Authorized Representative does not consider the Work to be substantially complete, the Authorized Representative will notify Contractor in writing, and give the reasons therefor. If Owner's Representative considers the Work to be substantially complete, the Authorized Representative will prepare and deliver a Certificate of Substantial Completion, which shall establish the date of Substantial Completion, shall include a punch list of items to be completed or corrected before final payment, and shall establish the time within which the Contractor shall finish the punch list. Failure to include an item on the punch list does not alter the Contractor's responsibility to complete all Work in accordance with the Contract Documents. If an inspection is required by public authorities having jurisdiction over the Work, such inspection must be made and passed before the Work, or any portion thereof will be considered substantially complete.

7.2 Final Inspection: Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, the County will make a final inspection with Contractor, and provide written notice of all the particulars in which inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

7.3 Punch List: Upon the occurrence of Substantial Completion, the punch list items shall be promptly commenced and thereafter completed within thirty (30) days after final completion.

SECTION 8. TERM, SUSPENTION OF WORK, AND TERMINATION

8.1 Agreement Term: The term of this Agreement shall begin on the date of execution, and shall continue until the complete performance of the terms and conditions of this Contract by the parties unless either party terminates this Contract in accordance with its terms.

8.2 Suspension by County for Convenience: The County may, in its sole discretion and without cause, order the Contractor in writing to suspend or interrupt the Project in whole or in part for such period of time as the County may determine. In the event the County suspends or interrupts the Work, an adjustment may be made to account for any change in the actual cost of performance of the Work caused by the suspension, or interruption. No adjustment shall be made for an increase in the Contract Price if the performance of the work is, was, or would have been so suspended, delayed, or interrupted by another cause for which the Contractor is responsible, or when an equitable adjustment is made or denied under another provision of this Contract.

8.3 Automatic Termination: This Agreement shall automatically terminate upon complete performance of the terms and conditions of the Agreement by each Party, or otherwise in accordance with its terms.

8.4 Termination for Insolvency and Bankruptcy: The County, in its sole discretion, may immediately terminate this Agreement without notice or the opportunity to cure if Contractor becomes insolvent or files any petition for bankruptcy.

8.5 Termination for Cause: Upon seven (7) calendar days' notice to Contractor, the County may terminate the Contract for cause if the Contractor:

a. Persistently or repeatedly refuses or fails to supply enough properly skilled workers or proper materials;

b. Fails to make payment to Subcontractors for materials or labor in accordance with respective agreements between the Contractor and the Subcontractor;

c. Disregards laws, ordinances, rules, regulations, or orders of public authority having jurisdiction concerning the Project: or

d. Otherwise commits substantial breach of a provision of the Contract Documents.

8.6 Termination for Convenience: Upon seven (7) calendar days' written notice to Contractor, the County may, in its sole discretion and without penalty or prejudice to any right or remedy of County, terminate this Contract for convenience and without cause at any time. The written notice must be provided in accordance with Section 18.19. The notice must state the reasons for such termination, and provide an effective date of the termination. The notice may also contain instructions necessary to protect, store, or decommission any incomplete work or systems, and/or for safety. Upon receipt of such notice, Contractor shall immediately proceed with the following obligations regardless of whether a dispute regarding the Contract exists:

a. Stop all work;

b. Comply with any instructions contained in the termination notice;

c. Place no further subcontracts or order for materials or services;

d. Terminate all subcontracts for convenience;

e. Cancel all materials and equipment orders as applicable; and

f. Take appropriate action to protect and preserve all property related to the Contract which is in the possession of Contractor.

8.7 Notice of Termination: The terminating Party shall provide seven (7) days written notice of termination to the other Party as provided in Section 18.19.

8.8 Discretionary Opportunity to Cure: A Party receiving notice of termination for failure to perform in accordance with the terms of this Agreement shall have the opportunity to cure its failure to perform beginning on the day of its receipt of the written notice, and continuing for thirty (30) calendar days thereafter. The cure, if made, shall be to the terminating Party's satisfaction. If no cure is made, the Agreement will terminate on the date specified in the written termination notice, or if no date is specified, on the thirtieth (30^{th}) calendar day after the date of receipt of the notice, unless otherwise agreed by the Parties.

8.9 County's Rights After Termination: In the event of termination, the County may immediately take possession of the site, and of all materials, equipment, tools, and construction equipment and machinery thereon. The County may finish the Project by whatever reasonable method it deems expedient.

8.10 Duty to Mitigate: In the event of termination or suspension under this Contract, the

Contractor shall take all reasonable actions to mitigate its damages and any and all claims which may be asserted against the County.

8.11 Responsibility During Demobilization: While demobilizing, the Contractor shall take all necessary and reasonable actions to preserve and protect the Work, the site, and other property of the County or others at the site.

8.12 Payment After Termination: In the event the County terminates the Contract, the County shall pay the Contractor only for work performed prior to the date of termination, and that is satisfactory to County. Contractor shall not be entitled to lost or anticipated profits should the County choose to exercise its option to terminate. Not later than 30 days after the date of termination, the Contractor shall submit to County a final termination settlement proposal to the County for Work already performed. It any of the Work contained in the settlement proposal is not satisfactory to the County, the County shall provide written notice to the Contractor. The County shall only pay for the portion of the Work that it determines in good faith to be satisfactory. If Contractor fails to submit the settlement proposal within the time specified, the County may unilaterally determine the amount owed to Contractor. Payment of the amount determined by the County shall be full satisfaction of any claim or debt due by County to Contractor under the Contract.

SECTION 9. RIGHT TO ASSURANCE

9.1 Right to Assurance: In the event that the county has a reason to question the Contractor's intent or ability to perform its obligations under the Contract, the County may demand that the Contractor give written assurance of its intent to perform, its plan to properly continue performance, and a detailed timeline for completion of the Project. The Contractor shall provide a written response to County that addresses the County's demand for written assurance within five (5) business days. If Contractor fails to provide the written response, the County may treat the failure as an anticipatory repudiation of the Contract.

SECTION 10. INSURANCE

10.1 Insurance Coverages: Contractor shall carry insurance in the types and amounts indicated below, which shall include items owned by the County in the care, custody, and control of the Contractor prior to and during construction and warranty period. It is intended that policies required by this Contract covering both the County and the Contractor shall be considered primary coverages as applicable. Contractor shall provide the County with certificates of insurance evidencing compliance with the requirements of this Section. The certificates shall indicate the name of the Contractor, the name of the insurance company, the policy number, and the term and limits of coverage. The insurance coverage must be with a company having Best's rating of A/VII or better, authorized to do business in the State of Texas at the time the policies are issued and in force, and shall be of the following types and limits:

a. Workers Compensation insurance in accordance with applicable law. Substitutes to genuine Workers' Compensation Insurance will not be allowed.

b. Employers' Liability insurance with limits of not less than $1,000,000 per injury by accident, $1,000,000 per injury by disease, and $1,000,000 per bodily injury by disease.

c. Comprehensive general liability insurance with a limit of not less than $1,000,000

each occurrence and $2,000,000 in the annual aggregate. Policy shall cover liability for bodily injury, personal injury, and property damage and products/completed operations arising out of the business operations of the policy holder.

d. Business Automobile Liability coverage for owned, non-owned, and hired vehicles, with a combined Bodily Injury/Property Damage with minimum limits of not less than $1,000,000 each accident. The policy shall cover liability arising from the operation of licensed vehicles by policyholder.

e. Builder's Risk Insurance or Installation Insurance on an all risk physical loss form in the Contract Amount. Coverage shall continue until the Work is accepted by the County. The County shall be a loss payee on the policy. If off-site storage is permitted, coverage shall include transit and storage in an amount sufficient to protect property being transported or stored.

10.2 Additional Insured: Contractor's insurance policies that cover performance under this Contract shall name the County an additional insured, except for Workers' Compensation and Professional Liability, if required. All endorsements naming the County as additional insured, waivers, and notices of cancellation of endorsements, as well as the Certificates of Insurance shall indicate: Waller County, Texas, 836 Austin Street, Suite 4300, Hempstead, Texas 77445.

10.3 Certificates of Insurance: Contractor shall provide the County with properly executed certificates of such insurance before the Contract is executed as verification of the coverage required in Section 10.1. The certificates shall indicate that all required insurance coverages are effective as of the Effective Date, and that such insurance shall not be canceled, except on thirty (30) days prior written notice to the County. The Contract shall not commence Work until the required insurance is obtained and until such insurance has been reviewed by the County. The Contractor must also provide Certificates of Insurance when a previously identified policy period has expired as verification of continuing coverage.

10.4 Certified Copies of Insurance Policies: The Contractor shall provide the County with certified copies of the required insurance policies and endorsements thereto upon request and without expense to the County.

10.5 Responsibility for Insurance: The Contractor shall be responsible for premiums, deductibles, and self-insured retentions, if any, state in the policies. All deductibles or self-insurance retentions shall be disclosed on the Certificates of Insurance.

10.6 No Decrease in Liability: The County's acceptance or approval of the certificates of insurance or certified copies of insurance policies shall not relieve, decrease, or limit Contractor's liability. The insurance coverages required under this Contract are required minimum and are not intended to limit the responsibility of liability of the Contractor.

10.7 No Cancellation or Modification: The Contractor shall continuously maintain the required insurance coverages during the Contract Term. Contractor shall not cancel or modify the insurance coverages required by this Agreement without providing thirty (30) days written notice to the County. Contractor shall not allow a lapse in the insurance coverage specified in this Contract for the duration of the Contract.

10.8 Workers Compensation Certification: By signing this Contract or providing or causing to be provided a certificate of coverage, the Contractor is representing to the County that all employees of the Contractor who will provided services on the Project will be covered by workers' compensation coverage for the duration of the Project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of self-insured, with the Texas Worker's Compensation Commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject Contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.

10.9 County Occupancy: All insurance shall provide for the County to take occupancy of the Work or any part thereof during the term of said insurance.

10.10 Failure to Comply: Contractor's failure to comply with any of these provisions is a breach of Contract by Contractor which entitles the County to declare the Contract void if Contractor does not remedy the breach within ten (10) days after receipt of notice of breach from the County.

SECTION 11. BONDS

11.1 Bonds Required: The Contractor must furnish the County with both a Performance Bond and a Payment Bond. Bonds shall be executed on forms acceptable to the County. Performance Bonds and Payment Bonds must be issued in an amount of one hundred percent (100%) of the Contract Amount as security for the faithful performance and/or payment of all of Contractor's obligations under the Contract Documents. Performance Bonds and Payment Bonds shall be issued by a solvent surety company duly authorized to do business in the State of Texas, and licensed in the State of Texas to issue surety bonds with a Best Rating of A/VII or better, and shall meet any other requirements established by law or by the County pursuant to applicable law.

11.2 Surety Acceptable to County: The surety company must be acceptable to the County. If the County rejects the Contractor's proposed surety company, the Contractor must obtain the required bonds from a surety acceptable to the County within five (5) days of the County's rejection.

11.3 Extension Through Warranty Period: The required Performance Bond must extend through any applicable warranty period.

11.4 Bond Signed by Agent: All bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

11.5 Surety Declares Bankruptcy: If the surety on any bond furnished by the Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in the State of Texas, or it ceases to meet the requirements of the preceding paragraph, Contractor shall within ten (10) days thereafter substitute another bond and surety, both of which must be acceptable to the County.

SECTION 12. INDEMNIFICATION

12.1 **INDEMNITY FOR BODILY INJURY OR DEATH CLAIMS: TO THE FULLEST EXTENT PERMITTING BY LAW, CONTRACTOR SHALL INDEMNIFY, DEFEND, AND HOLD HARMLESS THE COUNTY AND ITS OFFICERS,**

DIRECTORS, CONTRACTORS, EMPLOYEES, REPRESENTATIVES, AND AGENTS FROM AND AGAINST ALL CLAIMS, LOSSES, EXPENSES, COSTS, DEMANDS, SUITS, CAUSES OF ACTION, AND DAMAGES, INCLUDING WITHOUT LIMITATION, ATTORNEYS' FEES AND EXPENSES, FOR BODILY INJURY OR DEATH OF ANY EMPLOYEE OF CONTRACTOR, ITS AGENTS, OR ITS SUBCONTRACTORS OF EVERY TIER, EVEN IF THE BODILY INJURY OR DEATH IS CAUSED BY OR ALLEDGED TO HAVE BEEN CAUSED BY THE SOLE OR PARTIAL NEGLIGENCE, FAULT, OR STRICT LIABILITY OF ANY INDEMNITEE

12.2 **GENERAL INDEMNITY: CONTRACTOR, ITS OFFICERS, DIRECTORS, PARTNERS, CONTRACTORS, EMPLOYEES, REPRESENTATIVES, AGENTS, SUCCESSORS, ASSIGNS, VENDORS, GRANTEES, AND/OR TRUSTEES (COLLECTIVELY REFERRED TO AS "CONTRACTOR" FOR PURPOSES OF THIS SECTION), AGREE TO RELEASE, DEFEND, INDEMNIFY, AND HOLD HARMLESS THE COUNTY AND ITS OFFICERS, OFFICIALS, DEPARTMENT HEADS, REPRESENTATIVES, AGENTS, AND EMPLOYEES (COLLECTIVELY REFERRED TO AS "COUNTY" FOR PUPOSES OF THIS SECTION) FROM ANY AND ALL CLAIMS, DEMANDS, DAMAGES, INJURIES – INCLUDING DEATH AND BODILY INJURY – LIABILITIES, AND EXPENSES (INCLUDING ATTORNEY'S FEES AND COSTS OF DEFENSE) ARISING DIRECTLY OUT OF OR RESULTING FROM THE OPERATION OR PERFORMANCE OF CONTRACTOR UNDER THIS AGREEMENT. THE COUNTY WILL NOT ACCEPT LIABILITY FOR INJURIES THAT ARE THE RESULT OF THE NEGLIGENCE, MALFEASANCE, ACTION, OR OMMISION OF CONTRACTOR. CONTRACTOR AGREES TO ACCEPT LIABILITY FOR INJURIES TO ITSELF OR OTHERS CAUSED BY ITS OWN NEGLIGENCE, MALFEASANCE, ACTION, OR OMMISSION. THIS INDEMNIFICATION PROVISION IS ALSO SPECIFICALLY INTENDED TO APPLY TO, BUT NOT BE LIMITED TO, ANY AND ALL CLAIMS, WHETHER CIVIL OR CRIMINAL, BROUGHT AGAINST COUNTY BY ANY GOVERNMENT AUTHORITY OR AGENCY RELATED TO ANY PERSON PROVIDING SERVICES UNDER THIS AGREEMENT THAT ARE BASED ON ANY FEDERAL IMMIGATION LAW AND ANY AND ALL CLAIMS, DEMANDS, DAMAGES, ACTIONS, AND CAUSES OF ACTION OF EVERY KIND AND NATURE, KNOWN AND UNKNOWN, EXISTING OR CLAIMED TO EXIST, RELATING TO OR ARISING OUT OF ANY EMPLOYMENT RELATIONSHIP BETWEEN CONTRACTOR AND ITS EMPLOYEES OR SUBCONTRACTORS AS A RESULT OF THAT SUBCONTRACTOR'S OR EMPLOYEE'S EMPLOYMENT AND/OR SEPARATION FROM EMPLOYMENT WITH THE CONTRACTOR, INCLUDING BUT NOT LIMITED TO ANY DISCRIMINATION CLAIM BASED ON SEX, SEXUAL ORIENTATION OR PREFERENCE, RACE, RELIGION, COLOR, NATIONAL ORIGIN, AGE OR DISABILITY UNDER FEDERAL, STATE OR LOCAL LAW, RULE OR REGULATION, AND/OR ANY CLAIM FOR WRONGFUL TERMINATION, BACK PAY, FUTURE WAGE LOSS, OVERTIME PAY, EMPLOYEE BENEFITS, INJURY SUBJECT TO RELIEF UNDER THE WORKERS' COMPENSATION ACT OR WOULD BE SUBJECT TO RELIEF**

UNDER ANY POLICY FOR WORKERS COMPENSATION INSURANCE, AND ANY OTHER CLAIM, WHETHER IN TORT, AGREEMENT, OR OTHERWISE.

COUNTY SHALL HAVE THE RIGHT TO APPROVE DEFENSE COUNSEL TO BE RETAINED BY CONTRACTOR IN FULFILLING ITS OBLIGATION TO DEFEND AND INDEMNIFY COUNTY HEREUNDER, UNLESS SUCH RIGHT IS EXPRESSLY WAIVED BY COUNTY IN WRITING. COUNTY RESERVES THE RIGHT TO PROVIDE A PORTION OR ALL OF ITS OWN DEFENSE; HOWEVER, COUNTY IS UNDER NO OBLIGATION TO DO SO. ANY SUCH ACTION BY COUNTY IS NOT TO BE CONSTRUED AS A WAIVER OF CONTRACTOR'S OBLIGATION TO DEFEND COUNTY OR AS A WAIVER OF CONTRACTOR'S OBLIGATION TO INDEMNIFY COUNTY PURSUANT TO THIS AGREEMENT. IF CONTRACTOR FAILS TO RETAIN COUNTY APPROVED DEFENSE COUNSEL WITHIN TEN (10) BUSINESS DAYS OF COUNTY'S WRITTEN NOTICE THAT COUNTY IS INVOKING ITS RIGHT TO INDEMNIFICATION UNDER THIS AGREEMENT, COUNTY SHALL HAVE THE RIGHT TO RETAIN DEFENSE COUNSEL ON ITS OWN BEHALF, AND CONTRACTOR SHALL BE LIABLE FOR ALL REASONABLE ATTORNEY FEES AND COSTS INCURRED BY COUNTY. CONTRACTOR AND COUNTY AGREE TO FURNISH TIMELY WRITTEN NOTICE TO EACH OTHER OF ANY SUCH CLAIM.

THIS SECTION SHALL SURVIVE THE TERMINATION OF THIS AGREEMENT.

SECTION 13. RECORDS AND AUDITS

13.1 Record Copy: Contractor shall maintain a record copy of all Drawings, Specifications, Addenda, Change Orders, and written interpretations and clarifications in good order and annotated to show all changes made during construction. These documents, together with all final samples and all final Shop Drawings shall be available to the County and the Design Engineer during performance of the Work. Upon Substantial Completion of the Work, these records and documents, samples, and Shop Drawings shall be promptly delivered to the Authorized Representative.

13.2 Document Ownership: The County shall be the absolute and unqualified owner of all drawings, preliminary layouts, record drawings, sketches, as-built drawings and other documents, including those identified in Section 13.1, prepared by the Contractor pursuant to this Contract. The Contractor shall deliver all such documents to the County prior to submitting the final Application for Payment. Neither the Contractor nor any Subcontractor shall reuse any such documents or copies on any other project without the written consent of both the County and the Design Engineer.

13.3 Record Preservation and Maintenance: The Contractor shall maintain and preserve accurate and complete records relating to the Project for a period of five (5) years measured from the expiration of the defects period, termination of this Contract, until all audit and litigation matters that the County has brought to the attention of the Contractor are resolved, or as otherwise required by law, whichever is longer. Upon request, the Contractor shall provide the County with such records. This Section 13.3 shall survive termination of the Contract.

13.4 Right to Inspect, Examine, Reproduce, and Audit: Waller County, and any of its duly authorized employees or agents, shall have the right to inspect, examine, reproduce, and audit the books and records of the Contractor generated by or on behalf of Contractor, whether paper, electronic, or other media, which are in any way related to performance of or compliance with this Contract, including, but not limited to:

a. Accounting records;

b. Written policies and procedures;

c. Subcontract files (including proposals of successful and unsuccessful bidders, and other related documents);

d. Original estimates and estimating work sheets;

e. Correspondence;

f. Change Order files;

g. Back charge logs and supporting documentation;

h. General ledger entries detailing cash and trade discounts earned, insurance rates, and dividends;

i. Lump sum agreements between Contractor and any Subcontractor or Supplier;

j. Records necessary to evaluate Contract compliance, Change Order pricing, and any Claim submitted by Contractor or any of its payees; and

k. Any other Contractor record that may substantiate any charge related to this Contract.

13.5 Survival of Terms: Waller County's right to inspect, examine, reproduce, and audit under this section for the same period of years that Contractor is required to maintain and preserve records under Section 13.3.

SECTION 14. SILENCE OF SPECIFICATIONS

14.1 Silence of Specifications: The apparent silence of specifications as to any detail, or the apparent omission of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practice is to prevail, and that only material and workmanship of the finest quality are to be used. All interpretations of specifications shall be made on the basis of this statement. The items furnished under this contract shall be new, unused of the latest product in production for commercial trade. The materials used and workmanship provided shall be of the highest quality.

SECTION 15. INDEPENDENT CONTRACTOR

15.1 Independent Contractor: The Contractor and its employees are independent contractors. Contractor shall exercise independent judgment in performing its duties under this Contract, and is solely responsible for setting working hours, scheduling or prioritizing its work flow, and determining how the work is to be performed. No term or provision of this Contract shall be construed as creating an employer/employee relationship, partnership, or a joint venture. Contractor agrees and understands that the Contract does not grant any rights or privileges established for employees of the County.

SECTION 16. LIMIT OF APPROPRIATIONS

16.1 Limit of Appropriations: Funds for payment of this Contract have been provided through the County budget approved by Commissioners Court for this fiscal year only. The State of Texas law prohibits the obligation and expenditure of public funds beyond the current fiscal year. The fiscal year for the County extends from January 1 of each calendar year until December 31 of the same calendar year. It is the expectation of the County that funding will be available to pay for the expenditures related to this Contract. Notwithstanding anything to the contrary in this Contract, if at any time during the term of this Contract the Commissioners Court of the County fails to provide funding for this Contract during the County's following fiscal year, does not adopt a budget for expenditures, or is only able to partially fund the expenditures required by this Contract, the County may, upon giving Contractor written notice of such failure, terminate this Contract, or a part hereof without any further liability to Contractor. Neither County, its elected officials, employees, agents, insurers, attorneys, nor any other individual acting on behalf of County may make any representation or warranty as to whether any appropriation will, from time to time, be made by the Waller County Commissioners Court. The failure of County to appropriate sufficient funds will not cause the County to be in default under this Agreement, and Contractor's sole and exclusive remedy shall be to terminate this Agreement. The County shall pay Contractor for any services already rendered under this Contract prior to the effective date of the termination.

SECTION 17. TEXAS REQUIRED CERTIFICATIONS

17.1 No Boycotting Israel: By signature affixed hereto, Contractor certifies that it does not currently boycott Israel, and will not boycott Israel during the term of this Contract.

17.2 Texas Comptroller's List of Prohibited Companies: By signature affixed hereto, Contractor certifies that it is not listed on the website of the Texas Comptroller concerning the listing of companies that are identified under Texas Government Code §§ 806.051, 807.051, or 2253.153.

17.3 No Energy Company Boycott: By signature affixed hereto, Contractor certifies that it does not currently boycott energy companies, and will not boycott energy companies during the term of this Contract.

17.4 No Discrimination Against Firearm and Ammunition Industries: By signature affixed hereto, Contractor certifies that it does not currently discriminate against firearm and ammunition industries, and that it will not during the term of this Contract.

SECTION 18. MISCELLANEOUS PROVISIONS

18.1 Jurisdiction and Venue: This Contract is made in and shall be construed according to the laws of the State of Texas, without regard to its conflict of laws provisions. Venue of any court action(s) brought directly or indirectly by reason of this Contract shall be in a court of competent jurisdiction in Waller County, Texas. This Contract is made and is to be performed in Waller County, Texas.

18.2 Right of Review: The County may review any and all of the goods and services performed by Contractor under this Agreement. The County is granted the right to audit, at the County's election, all of Contractor's records and billings related to the performance of this Contract as may be reasonably necessary. Any payment, settlement, satisfaction, or

release made or provided during the course of performance of this Contract shall be subject to County's rights as may be disclosed by a review under this Section.

18.3 No Waiver: No claim or right arising out of a breach of this Contract can be discharged in whole or in part by a waiver or renunciation of the claim or right unless the waiver or renunciation is supported by consideration and is in writing signed by the aggrieved Party. The County's failure to require strict performance of any provision of this Contract does not waive or diminish the County's right thereafter to demand strict compliance with that or any other provision. The County's waiver or failure to exercise in any respect any right provided for in this Contract shall not be deemed a waiver of any further right under this Contract. The County does not waive, modify, or alter to any extent any of its defenses, immunities, or remedies.

18.4 No Personal Liability: Nothing herein shall be construed as creating any personal liability for any officer, agent, or employee of the County.

18.5 Severability: If any provision of this agreement is invalid, illegal, or unenforceable under any applicable statute, court decision, or rule of law, it is to that extent deemed to be omitted. In such event, there shall be substituted for such deleted provision a provision as similar as possible in terms and in effect to such deleted provision that is valid, legal, or enforceable. The remainder of the agreement shall be valid and enforceable to the maximum extent possible.

18.6 Entire Agreement: This Contract, together with all of its appendices, embodies the complete agreement of the Parties hereto, superseding all oral or written previous and contemporary agreements between the Parties and relating to matters in this Contract. By entering into this Contract, the Parties do not intend to create any obligations, express or implied, other than those specifically set out in this Contract.

18.7 Modification: The Contract may not be modified, altered, or amended except by written instrument duly authorized by the Waller County Commissioners Court and executed by both Parties.

18.8 Titles Not Restrictive: The titles assigned to the various sections and paragraphs of this Contract are for convenience only. Titles shall not be considered restrictive of the subject matter of any part of this Contract.

18.9 Tax Exempt: The County is a tax-exempt entity under Texas Tax Code § 151.039, and will not pay a tax from which it is exempt. Tax exempt paperwork will be provided upon written request for the purchase of any items qualifying for exemption under this Contract. In accordance with applicable laws and regulations, Contractor shall issue its Texas Resale Certificate to vendors and subcontractors for items that qualify for exemption. The Contractor shall be responsible for paying any and all taxes assessed, in whole or in part, on the Project or the Work. The County will not pay for, or reimburse Contractor for any tax from which it is exempt.

18.10 No Arbitration: A dispute arising under this Contract shall not be subject to arbitration.

18.11 Waiver of Subrogation: Contractor, Subcontractor's, and their insurance carriers waive any and all rights whatsoever with regard to subrogation against County as indirect parties to any suit arising out of personal or property damages resulting from Contractor's or Subcontractor's, or their employees' performance under this Contract.

18.12 Successors and Assigns: Waller County and the Contractor bind themselves, and their permitted successors executors, administrators, and assigns to this Contract. Neither Party shall assign, sublet, or transfer its interest, in whole or in part, in this Contract without the prior written consent of the other Party. The following conditions must be met before any permitted assignment becomes effective: a) Contractor must give written notice of a proposed assignment to the County at least thirty (30) days prior to the effective date of the assignment; b) the assignee must explicitly accept all of Contractor's obligations under this Contract; c) Contractor must retain its obligations to the County under this Contract until the assignment is effective; d) the assignment must be executed by both Contractor and the assignee; e) Contractor must provide the County a fully executed assignment agreement not later than five (5) business days after the assignment is signed, and f) the County provides a signed, written consent to the assignment.

18.13 Illegal Price Fixing: Contractor agrees to assign to the County any rights it may have to bring antitrust suits against its Suppliers for overcharges on materials incorporated in the Project growing out of illegal price fixing agreements. Contractor further agrees to cooperate with the County should the County which to prosecute suits against Suppliers for illegal price fixing.

18.14 Right to Offset: No money shall be paid by the County upon any claim, debt, demand, or account to any person, firm, corporation, or entity who owes taxes or any other debt to the County. The County shall be entitled to offset any such debt, claims, demand, or account by deducting the amount of taxes due to the County from any payment due to the Contractor. No assignment, or transfer of any such debt, claim, demand, or account after said taxes are due or other debt accrues shall affect the right of the County to so offset said taxes or other debt against the Contractor.

18.15 No Third-Party Beneficiaries: This Contract does not inure to the benefit of any third party, except permitted successor or assigns.

18.16 Authority to Sign: Signatories to this Contract represent and warrant that they have the authority to bind the respective parties.

18.17 Public Communications: Contractor shall not, under any circumstance, release any material or information developed in the performance of its services hereunder without the express written permission of the County, except where required by law to do so. If required by law to release any material or information, Contractor shall notify the County before the release. County shall be solely responsible for communicating with and providing information to the news media, citizens of Waller County, and other governmental agencies.

18.18 Confidentiality: The County is bound by Texas Government Code Chapter 552, the Public Information Act, and other laws concerning government records. Contractor shall clearly and noticeably mark all confidential information and documents it provides to the County pursuant to this Contract. The County will make good faith efforts to promptly notify Contractor if any such information is requested in a public information request, subpoena, or other method so Contractor may argue against the release of such information. Contractor recognizes and understands that the final decision as to what information must be disclosed pursuant to the PIA lies with the Texas Attorney General. Contractor further agrees that the County may furnish information acquired through or pursuant to this

Contract and that is requested through the PIA to the Texas Attorney General for a determination of whether the information must be disclosed. Neither the County, nor any of its officers, or employees shall have any liability or obligation to any party for the disclosure to the public, or to any person or persons, of any items or data furnished to the County by Contractor in reliance on any statute, court opinion, court order, or the advice, decision, or opinion of the Texas Attorney General.

18.19 Notices: Notices delivered hereunder shall be in writing and shall be delivered by personal delivery or certified mail, return receipt requested. Mailed notices shall be deemed received three (3) business days after the notice is placed in the mail with proper postage paid. Any notice or certification to be provided pursuant to this Agreement shall be delivered to the following persons, unless a substitute representative is designated in writing:

To the County	To Contractor:
Attn: County Judge 836 Austin Street, Suite 4300 Hempstead, Texas 77445	As indicated on Bidder's Business Information Sheet

With a copy to:

Waller County Road & Bridge Dept.
Attn: Ross McCall
775 Bus 290 East
Hempstead, Texas 77445

END

Contract Special Terms and Conditions

Bidder must clearly identify on this form whether it requests any Special Terms and Conditions that deviate from the Bid Documents, including the Contract Documents, or any other requirements contained in the IFB. Complete and detailed information regarding deviations must be clearly identified on this form. The County will consider any Special Terms and Conditions in its Contract award decision, and reserves the right to accept or reject a Bid based upon any submitted deviation.

In the absence of the identification on this form of requested deviations, Bidder must fully comply with the Bid Documents and Contract Documents and all other requirements associated with this IFB if awarded a Contract under this IFB. A deviation will not be effective unless it is accepted by the County. The County may, in its sole discretion, seek clarification from and/or communicate with Bidder(s) regarding any submitted deviation, consistent with general procurement principles of fair competition. The County reserves the right to accept or reject a Bid based upon any submitted deviation.

Please mark one of the following:

☐ Bidder requests NO deviations.

☐ Bidder requests deviations.

Specifically identify the language and location or section of the Bid Documents and/or Contract Documents that Bidder is requesting a deviation from, and provide the specific language to be substituted as Special Terms and Conditions. **Attach the sheet(s) containing the requested deviations to his form.**

Company Name	Date
Signature of Authorized Company Official	Printed Name

Contract Sheet

Contract Sheet
Bid 26-009

THE STATE OF TEXAS
COUNTY OF WALLER

This Contract is made and entered into on the _____ day of _____, 2025, by and between Waller County, Texas, a political subdivision of the State of Texas ("County"), acting through County Judge Carbett "Trey" Duhon, III by virtue of an order of Waller County Commissioners Court, and _____, of the City of _____, County of _____, and State of _____ ("Contractor") (referred to individually as "Party," and collectively as "Parties").

In consideration of the promises, performances, payments, and agreements set forth herein, Contractor hereby agrees to commence and complete the following Project: **Reconstruction of Mathis Road for Waller County**, and all Work in accordance with the Contract Documents, which are incorporated herein by reference and made a part hereof for all purposes as if each were set out at length, word for word, and the County agrees to pay the Contractor the total amount of:

$	
(Figures)	(Words)

The Contractor hereby agrees to commence work on the date specified in the written Notice to Proceed to be issued by the County, and to finally complete construction of the improvements, as required by the Contract Documents within _____ calendar days. Waiver of any breach of this Contract shall not constitute waiver of any subsequent breach.

In consideration of the award and execution of this Contract, and in consideration of the waiver of its right to attorney's fees by the County, the Contractor knowingly and intentionally waives its right to attorney's fees under Texas Local Government Code Section 271.153 in any administrative proceeding, alternative dispute resolution proceeding, or litigation arising out of or connected to this Contract.

The County agrees to pay the Contractor from available funds for performance of the Contract in accordance with the Bind and provisions of the Contract Documents, subject to additions and deductions, as provided therein.

The County's payment obligations are payable only and solely from funds available for the purposes of this Contract.

It is further agreed that this contract shall not become binding or effective until signed by the parties hereto and a purchase order authorizing the items desired has been issued.

Although drafted by the County, the Contract, in the event of any disputes over its meaning or application, shall be interpreted fairly and reasonably, and neither more strongly for nor against either Party.

This Contract is executed to be effective upon the date of the last signature affixed hereto.

The undersigned, by their signature, represents that they are authorized to bind the Contractor to fully comply with the Contract. The Contractor, by signing below, acknowledges that they have read the entire Contract, and agree to be bound by the terms contained therein.

Approved this _____day of _____20_____.

Waller County, Texas

_____
County Judge, Carbett "Trey" Duhon, III

_____
Date

_____
By: Signature of Contractor

_____
Date

_____
Printed Name and Title of Signatory

ATTEST

_____
Debbie Hollan, County Clerk

DEBARMENT CERTIFICATION

Neither my company nor an owner or principal of my company has been debarred, suspended, or otherwise made ineligible for participation in Federal Assistance programs under Executive Order 12549, "Debarment and Suspension," as described in the Federal Register and Rules and Regulations. Neither my company nor an owner or principal of my company is currently listed on the government-wide exclusions in SAM, debarred, suspended, or otherwise excluded by agencies or declared ineligible under any statutory or regulatory authority. My company agrees to immediately notify Waller County if my company or an owner or principal is later listed on the government-wide exclusions in SAM, or is debarred, suspended, or otherwise excluded by agencies or declared ineligible under any statutory or regulatory authority.

By signature below, I certify that the above is true, complete, and accurate, and that I am authorized by my company to make this certification.

Company Name	Date
Signature of Authorized Company Official	Printed Name

NO ISRAEL BOYCOTT CERTIFICATION

Effective September 1, 2017, as amended effective May 7, 2019 (H.B. 793), a Texas governmental entity may not enter into a contract with a value of $100,000 or more that is to be paid wholly or partly from public funds with a company (excluding a sole proprietorship) that has 10 or more full-time employees for goods or services unless the contract contains a written verification from the company that it: (1) does not boycott Israel; and (2) will not boycott Israel during the term of the Contract. (Tex. Gov't Code Ch. 2270). Accordingly, this certification form is included to the extent required by law.

"Boycott Israel" means refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory, but does not include an action made for ordinary business purposes. Tex. Gov't Code §808.001(1).

By signature below, I certify and verify that Vendor does not boycott Israel and will not boycott Israel during the term of any contract awarded under this RFP, that this certification is true, complete, and accurate; and that I am authorized by my company to make this certification.

Company Name	
Signature of Authorized Company Official	Printed Name

NO ENERGY COMPANY BOYCOTT CERTIFICATION

Effective September 1, 2021, a Texas governmental entity may not enter into a contract with a value of $100,000 or more that is to be paid wholly or partly from public funds with a company (excluding a sole proprietorship) that has 10 or more full-time employees for goods or services unless the contract contains a written verification from the company that it: (1) does not boycott energy companies currently; and (2) will not boycott energy companies during the term of the Contract. (Tex. Gov't Code Ch. 2274). Accordingly, this certification form is included to the extent required by law.

"Boycott Energy Companies" means without an ordinary business purpose, refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations with a company because the company:

(a) engages in the exploration, production, utilization, transportation, sale, or manufacturing of fossil fuel-based energy and does not commit or pledge to meet environmental standards beyond applicable federal and state law; or

(b) does business with a company described by Paragraph (a) above. Tex. Gov't Code §809.001(1).

"Company" means a for-profit sole proprietorship, organization, association, corporation, partnership, joint venture, limited partnership, limited liability partnership, or any limited liability company, including a wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of those entities or business associations that exist to make a profit. (Tex. Gov't Code Ch. 2274.001(2)).

By signature below, I certify and verify that Vendor does not boycott energy companies and will not boycott energy companies during the term of any contract awarded under this RFP, that this certification is true, complete, and accurate; and that I am authorized by my company to make this certification.

_____	_____
Company Name	Date
_____	_____
Signature of Authorized Company Official	Printed Name

NO DISCRIMINATION AGAINST FIREARM AND AMMUNITION INDUSTRIES CERTIFICATION

Effective September 1, 2021, Chapter 2274 of the Texas Government Code provides that a Texas governmental entity may not enter into a contract with a company (excluding a sole proprietorship) for the purchase of goods or services unless the contract contains a written verification from the company that it (1) does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association, and (2) will not discriminate during the term of the contract against a firearm entity or firearm trade association. (Tex. Gov't Code §2274). Accordingly, this certification form is included to the extent required by law.

"Discriminate against a firearm entity or firearm trade association" means, with respect to the entity or association, to (1) refuse to engage in the trade of any goods or services with the entity or association based solely on its status as a firearm entity or firearm trade association; (2) refrain from continuing an existing business relationship with the entity or association based solely on its status as a firearm entity or firearm trade association; or (3) terminate an existing business relationship with the entity or association based solely on its status as a firearm entity or firearm trade association. The phrase does not include (1) the established policies of a merchant, retail seller, or platform that restrict or prohibit the listing or selling of ammunition, firearms, or firearm accessories; and (2) a company's refusal to engage in the trade of any goods or services, decision to refrain from continuing an existing business relationship, or decision to terminate an existing business relationship:

(a) to comply with federal, state, or local law, policy, or regulations or a directive by a regulatory agency; or

(b) for any traditional business reason that is specific to the customer or potential customer and not based solely on an entity's or association's status as a firearm entity or firearm trade association.

"Company" means a for-profit organization, association, corporation, partnership, joint venture, limited partnership, limited liability partnership, or limited liability company, including a wholly owned subsidiary, majority-owned subsidiary, parent company, or affiliate of those entities or associations that exists to make a profit.

By signature below, I certify and verify that Vendor does not discriminate against firearm and ammunition industries; that this certification is true, complete, and accurate; and that I am authorized by my company to make this certification.

_____	_____
Company Name	Date
_____	_____
Signature of Authorized Company Official	Printed Name

Form **W-9**
(Rev. March 2024)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Go to *www.irs.gov/FormW9* for instructions and the latest information.

Give form to the requester. Do not send to the IRS.

Before you begin. For guidance related to the purpose of Form W-9, see *Purpose of Form*, below.

Print or type. See ***Specific Instructions*** on page 3.

1 Name of entity/individual. An entry is required. (For a sole proprietor or disregarded entity, enter the owner's name on line 1, and enter the business/disregarded entity's name on line 2.)

2 Business name/disregarded entity name, if different from above.

3a Check the appropriate box for federal tax classification of the entity/individual whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor ☐ C corporation ☐ S corporation ☐ Partnership ☐ Trust/estate

☐ LLC. Enter the tax classification (C = C corporation, S = S corporation, P = Partnership) . . . . .

Note: Check the "LLC" box above and, in the entry space, enter the appropriate code (C, S, or P) for the tax classification of the LLC, unless it is a disregarded entity. A disregarded entity should instead check the appropriate box for the tax classification of its owner.

☐ Other (see instructions)

3b If on line 3a you checked "Partnership" or "Trust/estate," or checked "LLC" and entered "P" as its tax classification, and you are providing this form to a partnership, trust, or estate in which you have an ownership interest, check this box if you have any foreign partners, owners, or beneficiaries. See instructions . . . . . ☐

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any)

Exemption from Foreign Account Tax Compliance Act (FATCA) reporting code (if any)

(Applies to accounts maintained outside the United States.)

5 Address (number, street, and apt. or suite no.). See instructions.

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. See also *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

			–		–				

or

Employer identification number

		–							

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and, generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here	**Signature of U.S. person**	**Date**

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9*.

What's New

Line 3a has been modified to clarify how a disregarded entity completes this line. An LLC that is a disregarded entity should check the appropriate box for the tax classification of its owner. Otherwise, it should check the "LLC" box and enter its appropriate tax classification.

New line 3b has been added to this form. A flow-through entity is required to complete this line to indicate that it has direct or indirect foreign partners, owners, or beneficiaries when it provides the Form W-9 to another flow-through entity in which it has an ownership interest. This change is intended to provide a flow-through entity with information regarding the status of its indirect foreign partners, owners, or beneficiaries, so that it can satisfy any applicable reporting requirements. For example, a partnership that has any indirect foreign partners may be required to complete Schedules K-2 and K-3. See the Partnership Instructions for Schedules K-2 and K-3 (Form 1065).

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS is giving you this form because they

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I. List of Technical Specifications

a. Harris County Specifications

Reference Harris County Standard Engineering Design Specifications (2023 revision)

Where applicable.

Spec No.	Specification Title
100	Preparing Right-of-Way
105	Removing Base and Asphalt Pavement
108	Removing Structures
110	Excavation
130	Borrow
162	Sodding for Erosion Control
164	Seeding for Erosion Control
275	Cement Treatment (Road-Mixed)
292	Dense-Graded Hot-Mix Asphalt Base Course
312	Tack Coat
314	Emulsified Asphalt (Prime Coat)
360	Cement Treatment (Plant Mixed)
464	Reinforced Concrete Pipe
502	Traffic Sings, Roadside Signs, and Mailboxes
530	Concrete Curb, Concrete Curb and Gutter, Sidewalks and Driveways
591	Temporary Erosion, Sedimentation, and Environmental Controls
636	Signs
662	Work Zone Pavement Markings
666	Retroreflectorized Pavement Markings
694	Temporary Traffic Control
697	Constructing Detours
698	Low Profile Concrete Barrier

b. Texas Department of Transportation Standard Specifications

Reference Texas Department of Transportation Standard Specifications for Construction of Highways, Streets and Bridges. (2024 revision) where applicable when identified in the Bid Form specification as “TxDOT”.

Spec No.	Specification Title
467	Safety End Treatment
510	One-Way Traffic Control
466	Headwalls and Wingwalls

II. Summary of Work

Reconstruction of Mathis RD from 1800' south of the intersection at Betka Rd on the north end to the intersection at Rochen Rd at the South end in Waller County

The scope of work for the above project includes removal of existing asphalt pavement, maintaining the existing ditches, and regrading and replacing cross culverts if necessary.

The scope includes proposing 11-ft travel lanes and a 2-ft paved shoulder with a proper base and an asphalt pavement.

The scope includes replacement of existing cross culverts varying in size from 18" to 30", and the addition of safety end treatments on each cross culverts.

Traffic control, permanent signing and stripping, and storm water pollution prevention are also included as part of the scope for this project.

III. Utility Adjustments Summary

There will be no relocation of existing utilities in the project limits.

Below is a list of existing utilities identified within the project area:

Utility List Table					
Utility Owner	**Utility Type**	**Start Station**	**Start Offset**	**End Station**	**End Offset**
AT&T	Underground Telecom Line	10+00	26' RT	10+63	24' RT
AT&T	Underground Telecom Line	10+00	24' RT	11+23	21' RT
AT&T	Underground Telecom Line	10+00	30' RT	140+09	17' RT
AT&T	Underground Telecom Line	10+11	26' LT	11+30	33' LT
AT&T	Underground Telecom Line	10+63	24' RT	11+23	21' RT
AT&T	Underground Telecom Line	11+23	21' RT	11+30	33' LT
AT&T	Underground Telecom Line	11+30	33' LT	11+23	118' LT
AT&T	Underground Telecom Line	11+30	33' LT	11+55	25' LT
AT&T	Underground Telecom Line	11+55	23' LT	35+46	33' LT
AT&T	Underground Telecom Line	35+46	33' LT	38+08	23' LT
AT&T	Underground Telecom Line	35+46	33' LT	35+53	139' LT
AT&T	Underground Telecom Line	35+46	33' LT	37+73	31' LT
AT&T	Underground Telecom Line	36+00	142' LT	36+02	35' LT
AT&T	Underground Telecom Line	36+03	35' LT	37+73	31' LT
AT&T	Underground Telecom Line	36+03	35' LT	52+28	33' LT
AT&T	Underground Telecom Line	37+73	31' LT	37+73	34' RT
AT&T	Underground Telecom Line	37+92	31' LT	51+78	31' LT
AT&T	Underground Telecom Line	38+08	23' LT	42+26	23' LT
AT&T	Underground Telecom Line	42+26	23' LT	43+02	28' LT

Utility Owner	Utility Type	Start Station	Start Offset	End Station	End Offset
AT&T	Underground Telecom Line	42+51	31' LT	42+56	141' RT
AT&T	Underground Telecom Line	42+61	50' RT	42+58	140' RT
AT&T	Underground Telecom Line	42+61	50' RT	42+89	30' RT
AT&T	Underground Telecom Line	42+89	30' RT	140+64	15' LT
AT&T	Underground Telecom Line	43+02	28' LT	51+75	29' LT
AT&T	Underground Telecom Line	51+75	29' LT	52+38	33' LT
AT&T	Underground Telecom Line	51+78	31' LT	51+78	135' LT
AT&T	Underground Telecom Line	52+17	137' LT	52+28	33' LT
AT&T	Underground Telecom Line	52+25	136' LT	52+28	33' LT
AT&T	Underground Telecom Line	52+38	33' LT	140+64	15' LT
AT&T	Underground Telecom Line	140+09	20' RT	141+31	21' RT
AT&T	Underground Telecom Line	140+09	17' RT	142+08	42' RT
AT&T	Underground Telecom Line	140+64	15' LT	141+40	87' LT
AT&T	Underground Telecom Line	140+72	19' RT	141+56	34' LT
AT&T	Underground Telecom Line	140+76	24' LT	141+40	87' LT
AT&T	Underground Telecom Line	141+25	89' RT	141+38	31' LT
AT&T	Underground Telecom Line	141+25	147' RT	141+25	89' RT
AT&T	Underground Telecom Line	141+31	21' RT	141+40	87' LT
AT&T	Underground Telecom Line	141+31	21' RT	141+41	71' LT
AT&T	Underground Telecom Line	141+40	87' LT	142+08	87' LT
AT&T	Underground Telecom Line	141+54	34' LT	142+08	40' LT
CenterPoint Electric	Aerial Electric Line	10+00	32' LT	140+68	19' LT
CenterPoint Electric	Aerial Electric Line	11+28	80' LT	11+30	79' RT

Utility Owner	Utility Type	Start Station	Start Offset	End Station	End Offset
CenterPoint Electric	Aerial Electric Line	33+25	33' LT	33+33	98' RT
CenterPoint Electric	Aerial Electric Line	37+04	34' LT	37+04	35' RT
CenterPoint Electric	Aerial Electric Line	42+63	34' LT	42+61	148' RT
CenterPoint Electric	Aerial Electric Line	43+48	78' LT	43+48	34' LT
CenterPoint Electric	Aerial Electric Line	46+06	34' LT	46+13	68' RT
CenterPoint Electric	Aerial Electric Line	54+56	33' LT	54+54	74' RT
CenterPoint Electric	Aerial Electric Line	67+65	99' RT	67+78	95' LT
CenterPoint Electric	Aerial Electric Line	85+36	38' LT	85+52	106' RT
CenterPoint Electric	Aerial Electric Line	101+72	136' RT	101+80	34' LT
CenterPoint Electric	Aerial Electric Line	104+15	39' LT	104+36	124' RT
CenterPoint Electric	Aerial Electric Line	105+98	26' LT	105+95	71' RT
CenterPoint Electric	Aerial Electric Line	121+01	23' LT	120+98	86' RT
CenterPoint Electric	Aerial Electric Line	122+59	16' LT	122+58	14' RT
CenterPoint Electric	Aerial Electric Line	123+04	16' LT	123+04	97' RT
CenterPoint Electric	Aerial Electric Line	127+48	17' LT	127+40	66' RT
CenterPoint Electric	Aerial Electric Line	131+81	17' LT	131+82	66' RT
CenterPoint Electric	Aerial Electric Line	140+15	130' LT	140+13	132' RT
CenterPoint Electric	Aerial Electric Line	140+40	126' LT	140+38	135' RT
CenterPoint Electric	Aerial Electric Line	140+75	128' LT	140+71	136' RT
CenterPoint Electric	Aerial Electric Line	141+10	96' LT	141+36	142' RT
CenterPoint Electric	Aerial Electric Line	141+10	96' LT	142+09	95' RT
Comcast	Underground Telecom Line	140+77	36' LT	141+11	96' LT
Comcast	Underground Telecom Line	140+78	132' LT	140+77	36' LT
Comcast	Aerial Telecom Line	141+10	96' LT	141+36	142' RT
Comcast	Aerial Telecom Line	141+10	96' LT	142+09	92' LT

GEOTECHNICAL INVESTIGATION
WALLER COUNTY MATHIS ROAD RECONSTRUCTION
Waller County, Texas

SUBMITTED TO

HR Green, Inc.

11011 Richmond Avenue, Suite 200

Houston, Texas 77042

BY

HVJ ASSOCIATES, INC.

Houston, Texas

December 31, 2025

REPORT NO. HGT250070

HVJ ASSOCIATES

HVJ ASSOCIATES

Houston
Austin
Dallas
San Antonio

6120 S. Dairy Ashford Rd.
Houston, TX 77072-1010
281.933.7388 Ph
281.933.7293 Fax
www.hvj.com

December 31, 2025

Mr. Jesus M. Olivas, P.E., ENV SP
Senior Project Manager – Transportation | Associate
HR Green, Inc.
11011 Richmond Ave, Suite 200
Houston, Texas 77042

Re: Geotechnical Investigation
Waller County Mathis Road Reconstruction
Waller County, Texas
Owner: Waller County
Waller County Project No. 23206
HVJ Report No. HGT250070

Dear Mr. Olivas:

Submitted herein is the final report of our geotechnical study for the above-referenced project. The study was performed in accordance with Proposal No. HGT250070, dated February 20, 2025, included as Attachment A – *Scope of Services* of the Agreement for Sub-Consultant Services between HR Green, Inc. (Company) and HVJ Associates, Inc. (Sub-Consultant), and is subject to the limitations presented in this report.

We appreciate the opportunity of working with you on this project. Please read the entire report and notify us if there are questions concerning this report or if we may be of further assistance.

Sincerely,

HVJ ASSOCIATES, INC.
Texas Firm Registration No. F-000646

Fernando L. Aponte-Rivera, P.E.
Project Manager

STATE OF TEXAS
FERNANDO L. APONTE-RIVERA
130661
LICENSED
PROFESSIONAL ENGINEER
12/31/2025

Ajay Pisati, E.I.T.
Staff Engineer

This document was released under the authorization of Fernando L. Aponte-Rivera, P.E. 130661 on December 31, 2025. Alteration of a sealed document without proper notification to the responsible engineer is an offense under the Texas Engineering Practice Act.

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PLATES

APPENDICES

1 EXECUTIVE SUMMARY

HVJ Associates, Inc. (HVJ) was retained by HR Green, Inc. (HR Green) under an agreement for sub-consultant services to provide geotechnical services for the planned pavement reconstruction of Mathis Road, from approximately 100 feet south of Rochen Road to Betka Road, in Waller County, Texas. Based on information provided by HR Green, we understand that the existing pavement will be fully reconstructed with a new asphalt pavement section. We also understand there is the potential for the installation of new underground utilities along portions of the road alignment. It is assumed that the invert depth of the proposed utilities will be approximately 10 feet below the existing grade and that they will be installed using open-cut techniques.

The purpose of this study is to provide design and construction recommendations for the proposed pavement reconstruction and underground utility installation. We performed twenty-seven (27) borings (B-1 through B-27) to a depth of 15 feet below the existing grade to determine soil stratigraphy and obtain subsurface soil information.

Based on the subsurface conditions revealed by the soil borings, the findings and recommendations of this report are summarized below:

1. The soil stratigraphy observed in the borings primarily consisted of loose to very dense cohesionless soils (SC, SM, and SC-SM) from below the existing grade to their respective termination depths. However, firm to hard cohesive soils (CL) were encountered in Borings B-1, B-3, B-25, and B-27 below a depth of 8 feet, and in Boring B-15 from the existing grade to a depth of 8 feet.

2. Groundwater was encountered in the drilled borings during drilling operations. Groundwater was only observed in borings B-6, B-13 and B-18 at depths ranging from 5.42 feet to 14 feet. It should be noted that water levels may fluctuate seasonally, in response to climatic conditions and with precipitation events. Groundwater was observed in borings during drilling as shown in the table below.

3. A literature review of surface faults near the project area was conducted to evaluate available information from published and open sources (Surface Deformation Analysis of the Houston Area Using Time Series Interferometry and Emerging Hot Spot Analysis, Khan, Shuhab D., Otto C. A. Gadea, Alyssa Tello Alvarado, and Osman A. Tirmizi. 2022.). Based on our review, faulting is not anticipated to impact the project site. However, it should be noted that unmapped faults that could impact the project may exist within the project area. A detailed fault study is not recommended for this project.

4. Based on the pavement design performed for the roadway segment under consideration, the proposed pavement section of 3 inches of Type D HMAC Surface Course over 8 inches of Black Base with 8 inches of Stabilized Subgrade will be adequate to support the expected traffic. Pavement design outputs are presented in Appendix E. Flexible pavement recommendations are provided in Section 6 of this report.

5. Recommendations for the installation of new underground utilities using open cut techniques are provided in Sections 7 and 8 of this report.

Please note that this executive summary does not fully relate our findings and opinions. Those findings and opinions are only presented through our full report.

2 INTRODUCTION

2.1 Project Description

HVJ Associates, Inc. (HVJ) was retained by HR Green, Inc. (HR Green) under an agreement for sub-consultant services to provide geotechnical services for the planned pavement reconstruction of Mathis Road, from approximately 100 feet south of Rochen Road to Betka Road, in Waller County, Texas. Based on information provided by HR Green, we understand that the existing pavement will be fully reconstructed with a new asphalt pavement section. We also understand there is the potential for the installation of new underground utilities along portions of the road alignment. It is assumed that the invert depth of the proposed utilities will be approximately 10 feet below the existing grade and that they will be installed using open-cut techniques.

The purpose of this study is to provide design and construction recommendations for the proposed pavement reconstruction and underground utility installation. We performed twenty-seven (27) borings (B-1 through B-27) to a depth of 15 feet below the existing grade to determine soil stratigraphy and obtain subsurface soil information.

2.2 Geotechnical Investigation Program

The objectives of this study were to gather information on subsurface soil conditions at the site and provide recommendations for the proposed pavement reconstruction and new underground utilities installation. The objectives were accomplished by:

- Drilling twenty-seven (27) borings for pavement and utilities (B-1 through B-27) to a depth of 15 feet below the existing grade. The borings were performed to determine soil stratigraphy and to obtain subsurface soil information.
- Performing laboratory tests to determine physical and engineering characteristics of the soils.
- Performing engineering analyses to develop design and construction recommendations for the proposed pavement reconstruction and new underground utilities installation.

Subsequent sections of this report contain descriptions of the field exploration, laboratory testing program, general subsurface conditions, design recommendations and construction considerations.

3 FIELD INVESTIGATION

3.1 Geotechnical Borings

The field exploration program undertaken at the project site was performed between June 25, 2025, and July 2, 2025. Twenty-seven (27) borings (B-1 through B-27) were drilled to a depth of 15 feet below the existing grade. The borings were drilled to determine soil stratigraphy and to obtain subsurface soil information. To facilitate the drilling of borings and to obtain information about the existing pavement structure, the existing pavement was cored along the project alignment.

The boreholes were backfilled with cement grout by the tremie method to their full depth. Approximate boring locations are presented on Plan of Borings, Plates 2A through 2G of this report.

3.2 Survey Data

Survey information was not available to us at the time of writing this report. Approximate GPS coordinates and surface elevation at each boring location were estimated from Topo View, developed by USGS.

Approximate coordinates and surface elevation for each boring and their termination depths are presented in Table 3-1 below.

Table 3-1 – Soil Boring Details

Boring	Boring Termination Depth, Feet	Coordinates		Elevation, Feet[1]
		Latitude	Longitude	
B-1	15	29.985889°	-95.908139°	226
B-2	16	29.987278°	-95.908167°	221
B-3	15.5	29.988611°	-95.908167°	214
B-4	15	29.990000°	-95.908167°	212
B-5	15.5	29.991389°	-95.908194°	212
B-6	15.5	29.992722°	-95.908222°	217
B-7	15.5	29.994111°	-95.908278°	222
B-8	15.5	29.995472°	-95.908278°	224
B-9	16	29.996833°	-95.908333°	219
B-10	15.5	29.998167°	-95.908306°	215
B-11	15.5	29.999500°	-95.908389°	214
B-12	15.5	30.000861°	-95.908333°	213
B-13	15.5	30.002222°	-95.908417°	212
B-14	15	30.003611°	-95.908389°	209
B-15	15.5	30.004944°	-95.908167°	208
B-16	15.5	30.006278°	-95.907778°	205
B-17	15	30.007639°	-95.907611°	206
B-18	15.5	30.009000°	-95.907444°	207
B-19	16	30.010361°	-95.907278°	206
B-20	15.5	30.011694°	-95.907056°	207
B-21	15.5	30.013056°	-95.907250°	207
B-22	15.5	30.014417°	-95.907667°	221
B-23	15.5	30.015750°	-95.907750°	225
B-24	15.5	30.017111°	-95.907806°	232
B-25	15.5	30.018444°	-95.907778°	235
B-26	15.5	30.019833°	-95.907806°	229
B-27	15	30.021167°	-95.907833°1	231

1. Surface elevation estimated from Topo view developed by USGS.

3.3 Sampling Methods

Soil samples were obtained continuously to the termination depth of the borings. Cohesive soil samples were obtained with a three-inch thin walled (Shelby) tube sampler in general accordance with ASTM D1587 standard. Each sample was removed from the sampler in the field, carefully examined, and then classified. The shear strength of cohesive soils was estimated by a hand penetrometer in the field. Cohesionless soils were sampled with the split spoon sampler in accordance with ASTM D 1586 standard. Suitable portions of each sample were sealed and packaged for transportation to our laboratory.

Detailed descriptions of the soils encountered in the borings are given on the boring logs presented in Appendix A. A key to the soils classification and symbols used on the boring logs is also presented in Appendix A.

3.4 Water Level Measurement

An attempt was made to measure the groundwater level in the borings during drilling. Groundwater measurements are discussed in Section 5.4 of the report.

4 LABORATORY TESTING

Selected soil samples were tested in the laboratory to determine applicable physical and engineering properties. Tests were performed according to the relevant ASTM Standards. These tests consisted of moisture content measurement, pocket penetrometer, percent passing No. 200 sieve, Atterberg limits, unconsolidated-undrained (UU) triaxial, moisture/density relationship, and California Bearing Ratio (CBR) tests.

The Atterberg limits and percent passing number 200 sieve tests were utilized to verify field classification by the Unified Soils Classification System, and the compression tests were performed to obtain the undrained shear strength of the soil. The type and number of tests performed for this investigation are summarized below:

Table 4-1 – Laboratory Test Summary

Type of Test	Number of Tests
Moisture Content (ASTM D2216)	75
Atterberg Limits (ASTM D4318)	54
Percent Passing No. 200 Sieve (ASTM D1140)	54
Unconsolidated Undrained (ASTM D2850)	4
Standard Proctor (ASTM D698)	2
California Bearing Ratio (ASTM D1883)	2

The laboratory test results are presented on the boring logs in Appendix A. The conversion between pocket penetrometer readings obtained in the field to the shear strength parameters presented on the boring logs were obtained using a conversion factor of 1/3. A summary of laboratory test results, except for moisture/density relationship and California Bearing Ratio is presented in Appendix B.

4.1 Standard Proctor and California Bearing Ratio

Two composite samples were prepared by combining the soil samples obtained from the upper 2 feet near the drilled borings along the project alignment. Standard Proctor and California Bearing

Ratio tests were performed on the composite samples and the results are included in Appendix C and Appendix D of this report.

5 SITE CHARACTERIZATION

5.1 General Geology

The project site is primarily located halfway in Willis Formation-Coastward Belt (Qwc) and halfway in Willis Formation (Qw). A small portion of the project site runs through the Alluvium Formation (Qal). A geology map is presented on Plate 3.

Willis Formation – Coastward Belt (Qwc)

The Willis Formation in the coastward belt consists of clay, silt, sand, and siliceous gravel ranging from granule to pebble size, with occasional fragments of petrified wood. The sand fraction is generally coarser than that of younger geologic units and is noncalcareous. The formation is typically deeply weathered and lateritic, indurated by clay, and locally cemented by iron oxide. Iron oxide concretions are abundant in this belt and have been locally utilized as road material. Toward the east, weathering intensity decreases, and the abundance of iron oxide concretions diminishes. The unit is fluvial in origin, with an estimated thickness of 100 feet or more.

Alluvium (Qal)

The alluvium consists of clay, silt, and sand with locally abundant organic matter. Deposits include point-bar, natural levee, stream channel, backswamp, coastal marsh, mud flat, and narrow beach facies. These materials are unconsolidated, variable in grain size, and typically occur in low-lying floodplain and coastal settings.

Willis Formation (Qw)

Regionally, the Willis Formation comprises clay, silt, sand, and minor siliceous gravel of granule to pebble size, locally containing petrified wood. The sand is coarser than that in younger units and is generally noncalcareous. The unit is typically deeply weathered, lateritic, and indurated by clay, with local cementation by iron oxide. Iron oxide concretions are numerous in places. The Willis Formation is fluvial in origin and has a maximum thickness of approximately 75 feet.

5.2 Geologic Faulting

The tectonic history of the Texas Gulf Coast includes a relatively stable depositional cycle since the Cretaceous Period (about 65 million years). During this period the area has been subjected to deposition of clays, silts, and sands resulting in over 30 thousand feet of sedimentary rocks. Underlying this clastic sequence are salt formations, which have migrated upwards to produce the typical salt dome features associated with the Texas Gulf Coast. In conjunction with salt movement, dewatering and compaction of some of the deeper sediments in the basin have resulted in the development of growth faults.

A literature review of surface faults near the project area was conducted to evaluate available information from published and open sources (Surface Deformation Analysis of the Houston Area Using Time Series Interferometry and Emerging Hot Spot Analysis, Khan, Shuhab D., Otto C. A. Gadea, Alyssa Tello Alvarado, and Osman A. Tirmizi. 2022.). Based on our review, faulting is not anticipated to impact the project site. However, it should be noted that unmapped faults that could impact the project may exist within the project area. A detailed fault study is not recommended for this project.

5.3 Soil Stratigraphy

HVJ's interpretation of soil and groundwater conditions at the project site is based on information obtained at the boring locations. This information has been used as the basis for our conclusions and recommendations. Significant variations at areas not explored by the project borings may require re-evaluation of our findings and conclusions.

The soil stratigraphy observed in the borings primarily consisted of loose to very dense cohesionless soils (SC, SM, and SC-SM) from below the existing grade to their respective termination depths. However, firm to hard cohesive soils (CL) were encountered in Borings B-1, B-3, B-25, and B-27 below a depth of 8 feet, and in Boring B-15 from the existing grade to a depth of 8 feet.

5.4 Groundwater Conditions

Groundwater was encountered in the drilled borings during drilling operations. Groundwater was only observed in borings B-6, B-13 and B-18 at depths ranging from 5.42 feet to 14 feet. It should be noted that water levels may fluctuate seasonally, in response to climatic conditions and with precipitation events. Groundwater was observed in borings during drilling as shown in the table below.

Table 5-1 – Groundwater Measurements

Boring	Groundwater Depth below Existing Grade, Feet				
	During Drilling	5 Minutes after Drilling	10 Minutes after Drilling	15 Minutes after Drilling	Caved-in
B-6	14.0	9.17	8.83	8.5	---[1]
B-13	10.0	7.58	5.83	5.42	9.0
B-18	12.0	8.25	8.25	7.58	8.42

1. Not Encountered.

5.5 Existing Pavement Thickness

The existing pavement within the project area was cored during drilling at the boring locations to obtain information associated with the existing pavement section components and approximate thickness. Existing pavement section information obtained from the drilled borings is presented in Table 5-2.

Table 5-2 – Existing Pavement Information

Boring	Asphalt Thickness (inches)	Base Thickness (inches)
B-1	2.5	6.5
B-2	3	7
B-3	2.5	7
B-4	2.5	6.5
B-5	3	8
B-6	3	5.5
B-7	3	9
B-8	3	7
B-9	3	9.5
B-10	2.5	9

Boring	Asphalt Thickness (inches)	Base Thickness (inches)
B-11	3	10
B-12	2.5	6.5
B-13	3	5
B-14	2.5	9.5
B-15	7	10
B-16	2.5	6
B-17	2.5	11
B-18	3	12.5
B-19	2.5	8
B-20	2.5	7.5
B-21	2.5	11
B-22	3.5	4.5
B-23	2.5	11
B-24	2.5	6.5
B-25	2.5	14.5
B-26	4	10.5
B-27	4.5	6.5

6 PAVEMENT DESIGN RECOMMENDATIONS

6.1 General

Based on the information provided by HR Green, we understand that the planned pavement reconstruction will consist of a flexible pavement section. We also understand that Waller County is considering the proposed section below for the reconstruction.

Table 6-1 – Proposed Pavement Section

Pavement Component	Thickness (inches)
Type D HMAC Surface Course	3
HMAC Base Course (Black Base)	8
Stabilized Subgrade	8
Total	**19**

HVJ performed a pavement thickness design using the DARWin program based on AASHTO Design Procedure to evaluate the proposed pavement section for the pavement reconstruction.

6.2 Traffic Data

The traffic parameters required for design include initial average daily traffic (ADT), growth rate, truck factor, and percent trucks in ADT.

A traffic count of 1,177 vehicles per day and a truck percentage of 3.2% (based on 2021 traffic volumes) were provided by HR Green and considered in the pavement design. An annual growth factor of 2% and a truck factor of 2.36 were assumed. The design 18-kip Equivalent Single Axle Loads (ESALs) in one direction were then calculated based on the projected ADT and the assumed

truck factor for flexible pavement, resulting in a design ESAL value of 418,185. A pavement design life of 20 years was considered for the ESAL calculations.

6.3 Design Criteria and Performance Constraints

The design and performance constraints selected for the pavement design are summarized in the following paragraphs.

Reliability Level and Overall Standard Deviation: A reliability (R) of 85 percent was selected for the pavement design performance (AASHTO Table 2.2). A mean value of the overall standard deviation (S_o) was selected to be 0.45 for flexible pavement based on AASHTO Guide for Design of Pavement Structures and the case where the variance of projected future traffic is considered (Chapter 4, Section 4.3).

Serviceability: The serviceability of a pavement is defined as its ability to serve the type of traffic that uses the facility. The condition of the pavement after the performance period is characterized by a Terminal Serviceability Index (P_t), which is a function of the pavement structure. A Terminal Serviceability Index of 2.5 was selected for design. The time at which a given pavement structure reaches its terminal serviceability depends on traffic volume and the original or initial serviceability (P_o), which was selected as 4.2. The design serviceability loss, the difference between the initial and terminal serviceability indices, is 1.7.

6.4 Subgrade Strength

The subgrade resilient modulus, M_R, was determined based on a design CBR of 4.0. The design CBR value considered for the analysis was obtained from the CBR test performed on the subgrade soils.

CBR was used to calculate the correlated subgrade resilient modulus using equation (1) below resulting in 6,000 psi.

$$\text{Subgrade Resilient Modulus} = 1500 * \text{CBR} \qquad (1)$$

6.5 Summary of Pavement Design Inputs

The estimated and/or assumed values for the design parameters are summarized in the following table:

Table 6-2 – Pavement Design Inputs

Parameter	Value
Performance Period	20 years
AADT (Year 2021)	1,177
Projected AADT (Year 2025)	1,274
Subgrade Resilient Modulus, MR	6,000 psi
Design Serviceability Loss	1.7
Overall Standard Deviation, S_O	0.45
Reliability	85%
ESALs	418,185

6.6 Flexible Pavement Section Recommendations

Based on the above design parameters, the Design Structural Number (SN) for the design traffic loading of 418,185 ESALs was computed to be 3.14. This value was used in conjunction with structural layer coefficients for flexible pavements to evaluate the proposed pavement section for the pavement reconstruction. The pavement design output is presented in Appendix E of this report

Table 6-3 – Structural Number for Proposed Pavement Section

Pavement Component	Thickness (inches)	Layer Coefficient	SN (i)
Type D HMAC Surface Course	3	0.44	1.32
HMAC Base Course (Black Base)	8	0.34	2.72
Stabilized Subgrade	8	0.11	0.88
Total	**19**	**---**	**4.92**

Based on the results from our evaluation, the proposed pavement section will be adequate to support the expected traffic.

6.7 Preparation of Subgrade

We recommend that at least eight inches of the subgrade be stabilized. Based on the information obtained from the drilled borings, subgrade soils consist of cohesionless soils (SC, SM and SC-SM) with the exception of boring B-15 where cohesive soils (CL) were observed. We recommend for Cement Treatment to be used for the subgrade stabilization. Stabilization of the subgrade should increase the modulus of subgrade reaction and provide subgrade stability for construction during inclement weather. In addition, subgrade stabilization should enhance long-term pavement performance by reducing the tendency of the soil to displace by pumping. Subgrade preparation for the proposed pavement section should consist of clearing, stripping, proof-rolling and subgrade stabilization as described below.

HVJ recommends the following procedure for subgrade preparation.

1. Clear the proposed project limits of existing pavement and subgrade to the grade required for the proposed pavement section.

2. In areas where fill, soft, compressible or loose soils are encountered, additional excavation may be required. Excavation should extend a minimum of two feet beyond the edge of the proposed pavement, if appropriate.

3. Surfaces exposed after excavation should be proof-rolled in accordance with Item 216 of 2023 Harris County Standard Specifications. The purpose of the proof-rolling operation is to identify any underlying zones or pockets of soft soils and to remove such weak materials.

4. Before stabilizing the subgrade, scarify the upper eight inches of exposed surface as required, mix with cement and compact it to 95 percent of standard Proctor maximum dry density (ASTM D698). The subgrade should be moisture conditioned to within 2% of the optimum moisture content. Cement stabilization should be in accordance with 2023 Harris County Standard Specifications, Item 275.

7 UTILITY DESIGN CRITERIA FOR OPEN CUT TECHNIQUE

7.1 General

The project involves the installation of underground utilities as part of the roadway reconstruction. Based on our communication with HR Green, we understand that the proposed utilities will have an invert depth no deeper than 10 feet below existing grade. We also understand that the utilities are planned to be installed using open-cut techniques. HVJ's recommendations for the installation of utilities using open-cut techniques are presented below.

7.2 Geotechnical Parameters

Geotechnical design parameters for soils that may be encountered in the pipe zone along the project alignment are presented in Table 7-1. Design parameters given in the table are based on field and laboratory test data obtained at boring locations in the invert depth range. It must be noted that because of the nature of the soil stratigraphy at this site, parameters at locations away from the borings may vary substantially from values reported in Table 7-1.

Table 7-1 – Geotechnical Parameters for Pipe Design

Boring	Approximate Maximum Invert Depth, Feet	Soil Description	Total Unit Weight (pcf)	Undrained Shear Strength (psf)/ Friction angle (deg)	Allowable Bearing Capacity (psf)	E'n, (psi)
B-1	0.75' – 10'	Clayey Sand (SC)	120	--/28	2600	1,500
		Sandy Lean Clay (CL)	125	2940/--	4900	5,000
B-2	0.83' – 10'	Clayey Sand (SC)	120	--/28	3200	1,500
B-3	0.80' – 10'	Silty Sand (SM)	120	--/36	9400	20,000
		Sandy Lean Clay (CL)	120	3000/--	5100	5,000
B-4	0.75' – 10'	Clayey Sand (SC)	120	--/36	9400	10,000
		Silty Clayey Sand (SC-SM)	120	--/28	3200	1,500
B-5	0.92' – 10'	Silty Sand (SM)	120	--/28	3200	5,000
B-6	0.71' – 10'	Silty Sand (SM)	120	--/30	3300	3,000
		Clayey Sand (SC)	120	--/32	5200	1,500
B-7	1.0' – 10'	Clayey Sand (SC)	120	--/30	4100	3,000
B-8	0.83' – 10'	Clayey Sand (SC)	120	--/28	3200	1,500
B-9	1.0' – 10'	Silty Sand (SM)	120	--/28	2600	3,000
		Clayey Sand (SC)	120	--/28	3200	1,500
B-10	0.96' – 10'	Silty Sand (SM)	120	--/34	6700	5,000
B-11	1.1' – 10'	Silty Sand (SM)	120	--/28	2600	5,000
		Clayey Sand (SC)	120	--/28	3200	1,500
B-12	0.75' – 10'	Silty Sand (SM)	120	--/28	2600	3,000
		Clayey Sand (SC)	120	--/32	5200	1,500

Boring	Approximate Maximum Invert Depth, Feet	Soil Description	Total Unit Weight (pcf)	Undrained Shear Strength (psf)/ Friction angle (deg)	Allowable Bearing Capacity (psf)	E'n, (psi)
B-13	0.67' – 10'	Silty Sand (SM)	120	--/32	4200	5,000
		Clayey Sand (SC)	120	--/32	11200	1,500
B-14	1.0' – 10'	Silty Sand (SM)	120	--/30	2500	5,000
		Clayey Sand (SC)	120	--/28	3200	1,500
B-15	1.42' – 10'	Sandy Lean Clay (CL)	125	780/--	1100	700
		Clayey Sand (SC)	120	--/36	15300	1,500
B-16	0.71' – 10'	Silty Sand (SM)	120	--/30	4100	5,000
B-17	1.13' – 10'	Silty Sand (SM)	120	--/32	4200	5,000
		Clayey Sand (SC)	120	--/28	3200	1,500
B-18	1.30' – 10'	Silty Sand (SM)	120	--/40	15300	5,000
B-19	0.88' – 10'	Silty Sand (SM)	120	--/34	7000	5,000
		Silty Clayey Sand (SC-SM)	120	--/28	3200	1,500
B-20	0.83' – 10'	Clayey Sand (SC)	120	--/32	5200	3,000
B-21	1.13' – 10'	Silty Clayey Sand (SC-SM)	120	--/30	3300	3,000
		Clayey Sand (SC)	120	--/32	5200	1,500
B-22	0.67' – 10'	Clayey Sand (SC)	120	--/36	15000	20,000
B-23	1.13' – 10'	Silty Sand (SM)	120	--/30	4100	3,000
B-24	0.75' – 10'	Clayey Sand (SC)	120	--/30	4100	1,500
B-25	1.42' – 10'	Clayey Sand (SC)	120	--/30	3300	3,000
		Sandy Lean Clay (CL)	125	3780/--	6300	3000
B-26	1.21' – 10'	Clayey Sand (SC)	120	--/30	4100	3,000
B-27	0.92' – 10'	Silty Clayey Sand (SC-SM)	120	--/28	2600	1,500
		Sandy Lean Clay (CL)	125	2000/--	3400	3000

"--" Not Applicable

The values shown in the above table represent our interpretation of the soil properties based on the available laboratory and field test data. Use of the soil properties shown above may or may not be appropriate for a particular analysis, since choice of design parameters often depends on whether total or effective stress analysis is used, rate of loading, duration of loading, geometry of loaded area, and other factors. The total unit weight values shown above represent our interpretation of soil unit weight at natural moisture content. The undrained shear strength and allowable bearing capacity values represent our interpretation of the shear strength in clay soils based primarily on the results of unconfined compression tests, unconsolidated undrained compression tests and hand penetrometer tests. The allowable bearing pressures include a factor of safety of three (3). These values are based

on the soil data obtained at the boring locations only and may be used for the noted invert depth zone. The modulus of elasticity values shown in the above table is according to AWWA M23 second edition Table 4-7 for cohesive soils. These are appropriate for stress levels up to about one-third the undrained shear strength and is intended to represent undrained conditions. However, drained modulus of elasticity values are used for long term analysis. Typically, 60 percent of the undrained modulus of elasticity value is used for the drained value for cohesive soils encountered in the Houston area. The cohesive soils encountered in the Houston areas are generally over consolidated. We recommend using coefficient of lateral earth pressure values of 1.0 and Poisson's ratio values of 0.5 for cohesive soils.

7.3 Pipe Design

The loads imposed on underground pipes depend principally upon the method of installation, the weight of overburden soils, roadway traffic load, and loads due to existing surface structures.

For design of rigid pipe loads installed using the open-cut method, loads due to overburden and traffic can be determined from Plate 6. The traffic load design provisions should be taken in accordance with Chapter 5 on the American Water Works Association (AWWA) Manual M9 (2008). The traffic load is generally based on AASHTO HS-20 truckloads as indicated in Chapter 5 of the American Water Works Association Manual M9 (2008).

7.4 Open Cut Bedding and Backfill

Pipe Bedding: Pipe embedment (bedding, haunching, and initial backfill) material for utilities, placing and compaction of embedment material and groundwater control (if necessary) should be in accordance with 2023 Harris County Standard Specifications, Item 400.

Trench Backfill: Trench backfill (initial backfill to the pavement base or subgrade) for utilities should be in accordance with 2023 Harris County Standard Specifications, Item 400. Fill material should be placed in loose lifts not exceeding eight inches and should be compacted to 95 percent of the standard Proctor maximum dry density as determined by ASTM D 698 as specified in 2023 Harris County Standard Specifications, Item 216. Cement stabilized sand should be placed in loose lifts not exceeding eight inches and should be compacted to 95 percent of the standard Proctor maximum dry density as determined by ASTM D 558 as specified in 2023 Harris County Standard Specifications, Item 216. However, the backfill up to 12 inches above the top of the pipe should be compacted carefully to prevent structural damage to the pipe.

8 UTILITY CONSTRUCTION RECOMMENDATIONS

8.1 General

This section is intended to address issues that might arise during construction. Our recommendations are intended for use as guidelines in dealing with particular soil conditions. The topics addressed in this section include trench excavation stability, groundwater control, and open-cut construction considerations.

The recommendations contained herein are not intended to dictate construction methods or sequences. Instead, they are provided solely to assist designers in identifying potential construction problems related to excavation, based upon findings derived from sampling. Depending upon the final design chosen for the project, the recommendations may also be useful to personnel who observe construction activity.

Prospective contractors for the project must evaluate potential construction problems on the basis of their review of the contract documents, their own knowledge of and experience in the local area, and on the basis of similar projects in other localities, taking into account their own proposed methods and procedures.

8.2 Open Cut Excavation Considerations

Excavations should satisfy two requirements. First, the soils above final grade must be removed without disturbing the soil below, which will support constructed facilities. Second, the sides of the excavation must be stable to prevent damage to adjacent streets and facilities as a result of either vertical or lateral movements of the soil. In addition, a satisfactory excavation procedure must include an adequate construction dewatering system to lower and maintain the water level, if encountered at least a few feet below the lowest excavation grade.

Excavation Stability: Excavations shall be shored, laid back to a stable slope or some other equivalent means may be used to provide safety for workers and adjacent structures. Earth pressures for braced excavations are presented on Plates 5A through 5C. Assessment of the need for excavation sloping, use of trench boxes, or other measures required to provide a stable excavation, and the use of appropriate construction practices and/or equipment is the contractor's responsibility. The following comments are intended to represent common solutions to stability problems encountered in similar soil conditions in the Houston area and may not be construed as excavation system design recommendations. The excavation operations shall be performed in accordance with 29 CFR Part 1926 subpart P, as amended, including rules published in the Federal Register, Vol. 54, No. 209, dated October 31, 1989, as a minimum. In addition, the provisions of legislation enacted by the Texas Legislature and Harris County should be satisfied.

The OSHA soil classifications for the subsurface soils in borings B-1 through B-27 are presented in Table 8-1, which is basically dominated by soil type C. We recommend that a professional engineer should design temporary support for trenches deeper than 20 feet, and that the OSHA tables are not used below this depth. In general, it is our opinion that the pressure distribution (for braced walls) should be used for design of sheeting or trench boxes. To reduce the potential for ground movement adjacent to the top of the excavation, the bracing should be preloaded in stages as the excavation is deepened. The detailed earth pressure diagram is presented on Plates 5A through 5C.

Table 8-1 – OSHA Soil Classification

Boring	OSHA Soil Type		
	Depth of Trench (feet)		
	0 – 5	5 – 10	10 – 15
B-1	C	B	B
B-2	C	C	C
B-3	C	B	B
B-4	C	C	C
B-5	C	C	C
B-6	C	C	C
B-7	C	C	C
B-8	C	C	C

Boring	OSHA Soil Type		
	Depth of Trench (feet)		
	0 – 5	5 – 10	10 – 15
B-9	C	C	C
B-10	C	C	C
B-11	C	C	C
B-12	C	C	C
B-13	C	C	C
B-14	C	C	C
B-15	C	B	C
B-16	C	C	C
B-17	C	C	C
B-18	C	C	C
B-19	C	C	C
B-20	C	C	C
B-21	C	C	C
B-22	C	C	C
B-23	C	C	C
B-24	C	C	C
B-25	C	C	C
B-26	C	C	C
B-27	C	C	C

The contractor should be aware of potential excavation stability problems while working in the vicinity of old trenches and the excavation system should be designed to accommodate this weak material (trench backfill). The vertical walls of excavations should be located a safe distance from existing utilities in order to prevent movement in the soil mass behind the excavation that may adversely affect the utilities. We recommend that the horizontal distance of existing utilities should be greater than their vertical distance from the bottom of excavation.

8.3 Groundwater Control

Based on our field investigation, groundwater seepage may be expected in excavations made for utility installation. However, it should be noted that groundwater conditions observed during drilling operations may not accurately reflect the groundwater conditions during construction, and therefore should only be considered as approximate. Groundwater levels may fluctuate seasonally and in response to rainfall. Assessment of the need for groundwater control and installation of appropriate dewatering equipment is the contractor's responsibility. The following comments are intended to represent common solutions to groundwater control problems encountered in similar soil conditions in the Harris County area and may not be construed as dewatering system design recommendations.

A conventional pump and sump arrangement may be adequate if water bearing cohesive soils are encountered during trench excavations. Well points or eductors may be utilized to lower the

groundwater level to at least three feet below the excavation level where water bearing cohesionless soils are encountered. Well points are generally not effective below about 15 feet beneath the top of the well point, and deeper dewatering requires deep wells with submersible pumps and eductors. Well points or eductors may be utilized if water bearing sands are encountered. In any case, the groundwater control system used must provide a relatively dry, stable base for construction.

Control of groundwater should be accomplished in a manner that will preserve the strength of the foundation soils, will not cause instability of the excavation and will not result in damage to existing structures. Where necessary to this purpose, the water will be lowered at least 3 feet in advance of excavation by pump and sump arrangement, wells, well points, or similar methods. Open pumping should not be permitted if it results in boils, loss of fines, softening of the subgrade, or excavation instability. Discharge should be arranged to facilitate sampling by the owner's representative or engineer.

8.4 Select Fill and General Earthwork Recommendations

The select fill required to raise the grade or backfill should consist of lean clay/sandy lean clay with a liquid limit less than 40 and a plasticity index between 8 and 20. Fill material that is used should be placed in loose lifts not exceeding eight inches and should be compacted to 95 percent of standard Proctor maximum dry density as determined by ASTM D698. The fill material should be moisture conditioned to within 2% of the optimum moisture content.

8.5 Spoil Disposal

Spoil from construction will be generated from the excavations. Soils that will be excavated from this project area will consist primarily of cohesionless soils and low to medium plasticity cohesive soils. Hence, the excavated soils should be tested before using them as backfill material for utilities. Lean clays with plasticity index ranging between 8 and 20 can be used for engineering fill.

9 MONITORING

As required under OSHA regulations, the contractor should provide a "competent person" to inspect trench excavations daily before the start of work, as needed during the shift, and after every rainstorm or other hazard increasing occurrence. When the competent person finds evidence of a hazardous condition, exposed workers should be removed from the hazardous area until the necessary precautions have been taken to ensure their safety. A competent person means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to workers, and who has authorization to take prompt corrective measures to eliminate them.

10 DESIGN REVIEW

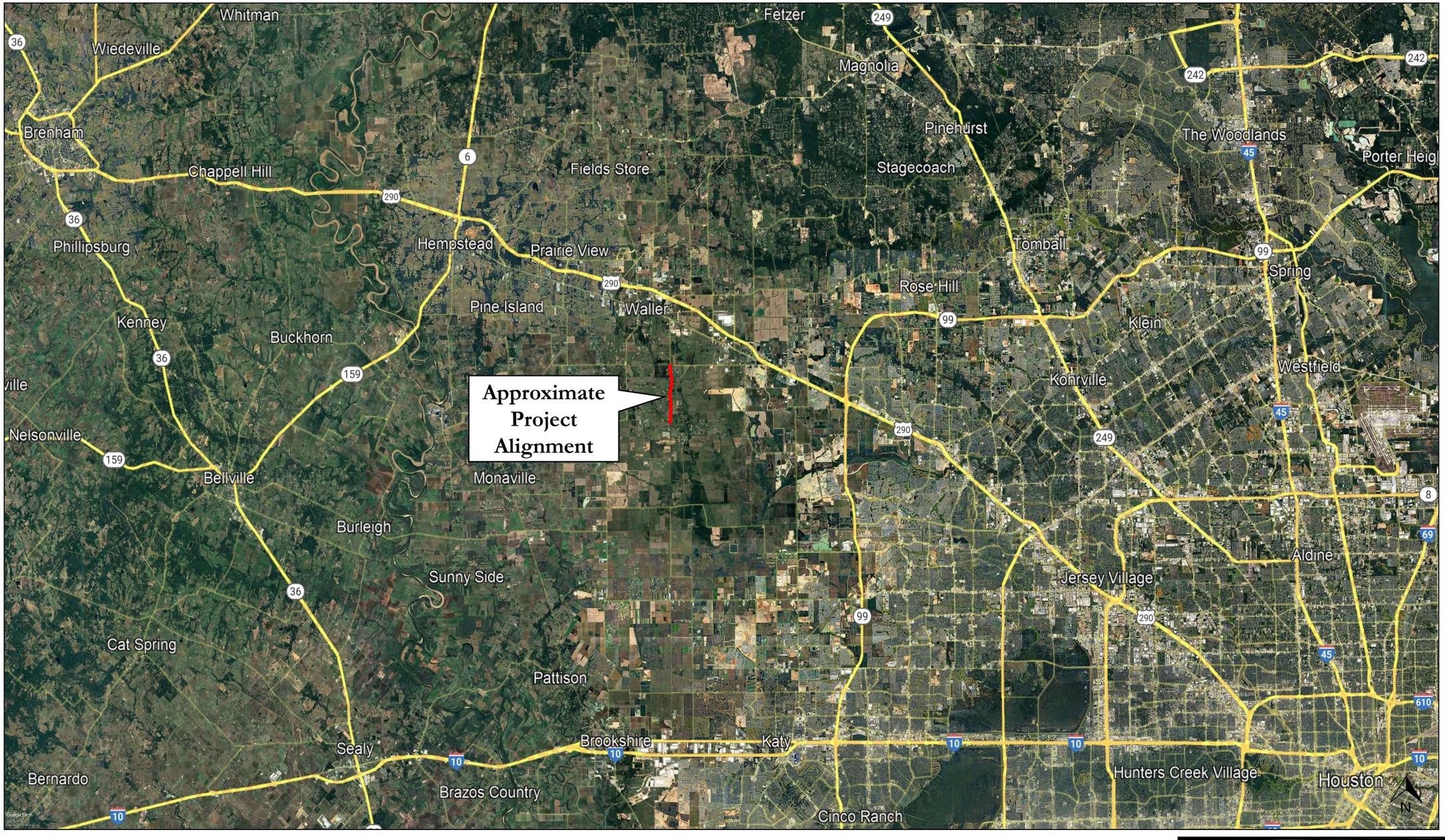
HVJ should be retained to review the final design plans and specifications for this project. During all grading and construction phases of this project, HVJ should provide the materials testing verification and observation services so our geotechnical recommendations may be interpreted and implemented correctly.

11 LIMITATIONS

This investigation was performed for the exclusive use of HR Green, Inc. and Waller County for the planned pavement reconstruction and new underground utilities installation along Mathis Road,

from approximately 100 feet south of Rochen Road to Betka Road, in Waller County, Texas. HVJ has endeavored to comply with generally accepted geotechnical engineering practice common in the local area. HVJ makes no warranty, express or implied. The analyses and recommendations contained in this report are based on data obtained from subsurface exploration, laboratory testing, the project information provided to us and our experience with similar soils and area conditions. The methods used indicate subsurface conditions only at the specific locations where samples were obtained, only at the time they were obtained, and only to the depths penetrated. Samples cannot be relied on to accurately reflect the strata variations that usually exist between sampling locations. Should any subsurface conditions other than those described in our boring logs be encountered, HVJ should be immediately notified so that further investigation and supplemental recommendations can be provided.

PLATES



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DATE: 08/05/2025	APPROVED BY: FA	PREPARED BY: AP

SITE VICINITY MAP
WALLER COUNTY MATHIS ROAD RECONSTRUCTION
(Project #23206)

PROJECT NO.:	DRAWING NO.:
HGT250070	PLATE 1

LEGEND:

APPROXIMATE DRILLED BORING LOCATIONS

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PLAN OF BORINGS
WALLER COUNTY MATHIS ROAD RECONSTRUCTION
(Project #23206)

PROJECT NO.:	DRAWING NO.:
HGT250070	PLATE 2A

LEGEND:

APPROXIMATE DRILLED BORING LOCATIONS

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PLAN OF BORINGS
WALLER COUNTY MATHIS ROAD RECONSTRUCTION
(Project #23206)

PROJECT NO.:	DRAWING NO.:
HGT250070	PLATE 2B

LEGEND:

APPROXIMATE DRILLED BORING LOCATIONS

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PLAN OF BORINGS
WALLER COUNTY MATHIS ROAD RECONSTRUCTION
(Project #23206)

PROJECT NO.:	DRAWING NO.:
HGT250070	PLATE 2C

LEGEND:

APPROXIMATE DRILLED BORING LOCATIONS

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PLAN OF BORINGS
WALLER COUNTY MATHIS ROAD RECONSTRUCTION
(Project #23206)

PROJECT NO.: HGT250070	DRAWING NO.: PLATE 2D

LEGEND:

APPROXIMATE DRILLED BORING LOCATIONS

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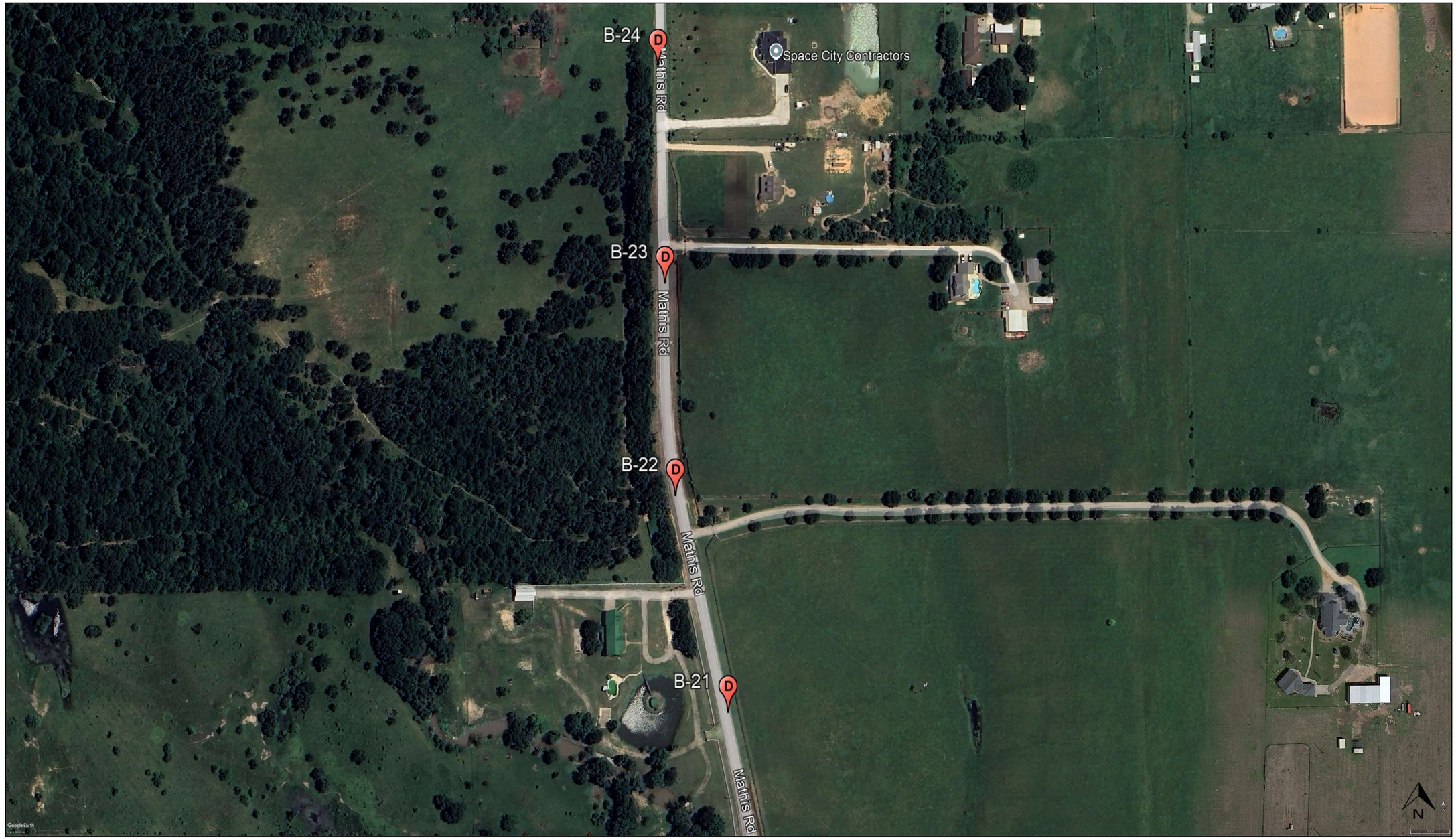
PLAN OF BORINGS
WALLER COUNTY MATHIS ROAD RECONSTRUCTION
(Project #23206)

PROJECT NO.:	DRAWING NO.:
HGT250070	PLATE 2E



LEGEND:

APPROXIMATE DRILLED BORING LOCATIONS

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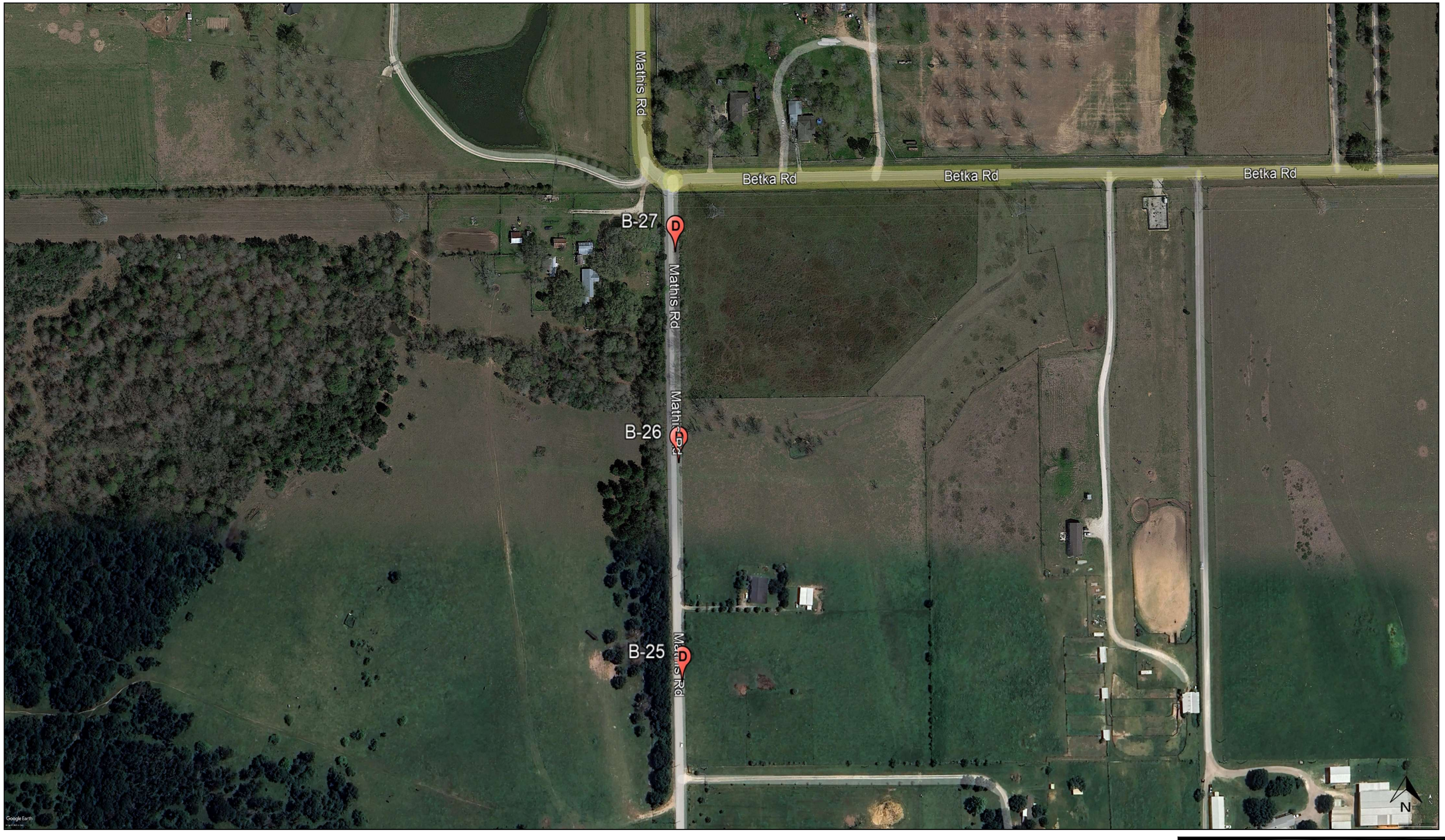
PLAN OF BORINGS
WALLER COUNTY MATHIS ROAD RECONSTRUCTION
(Project #23206)

PROJECT NO.:	DRAWING NO.:
HGT250070	PLATE 2F



LEGEND:

APPROXIMATE DRILLED BORING LOCATIONS

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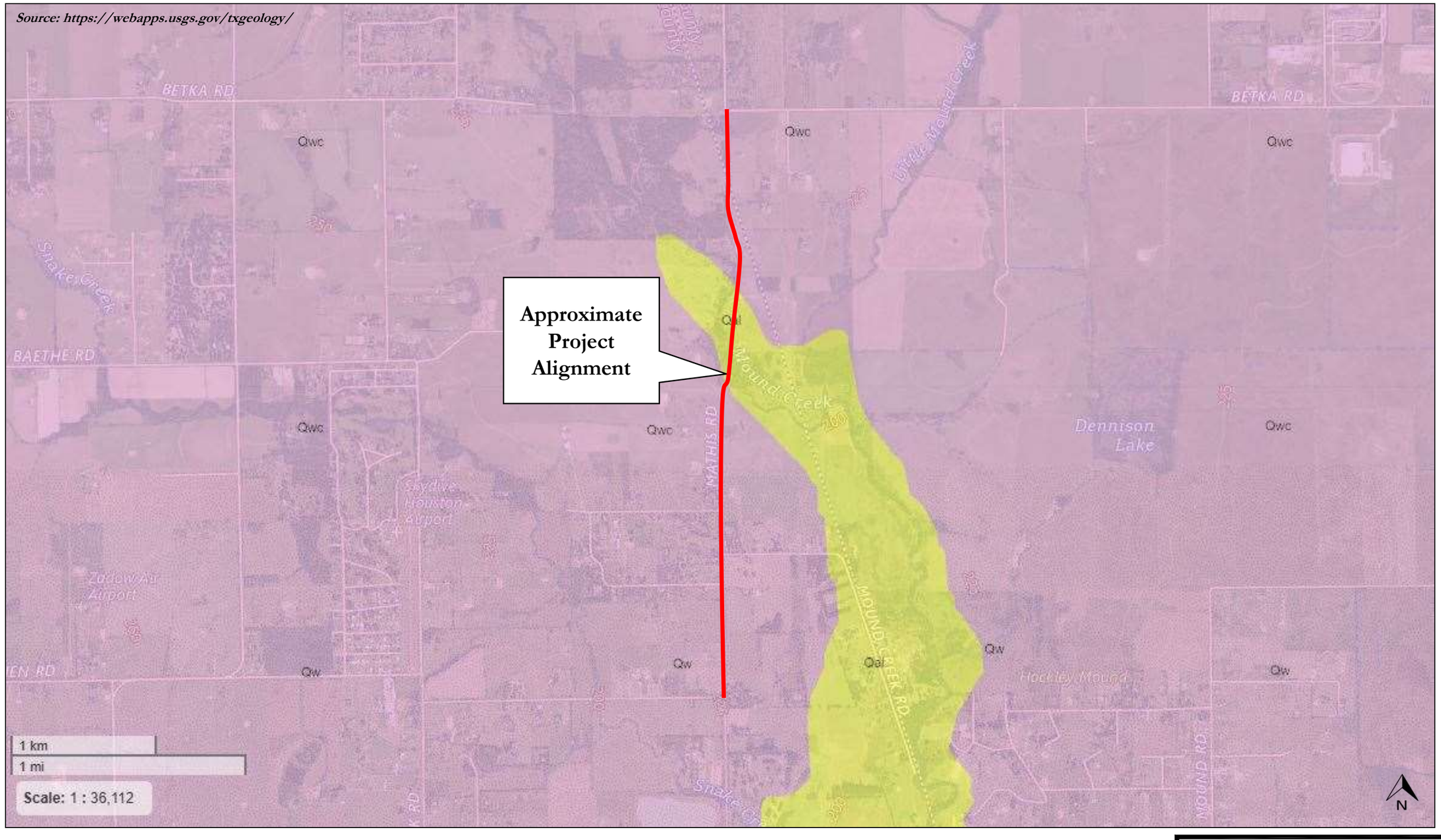
PLAN OF BORINGS
WALLER COUNTY MATHIS ROAD RECONSTRUCTION
(Project #23206)

PROJECT NO.:	DRAWING NO.:
HGT250070	PLATE 2G



Qwc *Willis Formation – Coastward Belt (Qwc): Clay, silt, sand, and siliceous gravel of granule to pebble size, including some petrified wood; sand coarser than in younger rocks, noncalcareous; mostly deeply weathered and lateritic, indurated by clay and cemented by iron oxide locally, iron oxide concretions abundant and locally used as road material in coastward belt of outcrop, Qwc, iron oxide concretions less abundant and amount of weathering decreases eastward in landward belt of outcrop, Qwl; coastward edge of base of Qwl outcrop is mostly at a lower elevation than base of landward edge of Qwc, indicating that the two outcrop belts may be of different ages; forms scarps on landward side; fluvialite; thickness ≥100 feet*

Qal *Alluvium (Qal): Clay, silt, and sand organic matter abundant locally; includes point-bar, natural levee, stream channel, backswamp, coastal marsh, mud flat, and narrow beach deposits that are shown by line symbol*

Qw *Willis Formation (Qw): Clay, silt, sand and minor siliceous gravel of granule to pebble size including some petrified wood; sand coarser than in younger units. Deeply weathered and lateritic, indurated by clay and cemented by iron oxide locally, concretions of iron oxide numerous, noncalcareous; fluviatile; maximum thickness 75 feet*

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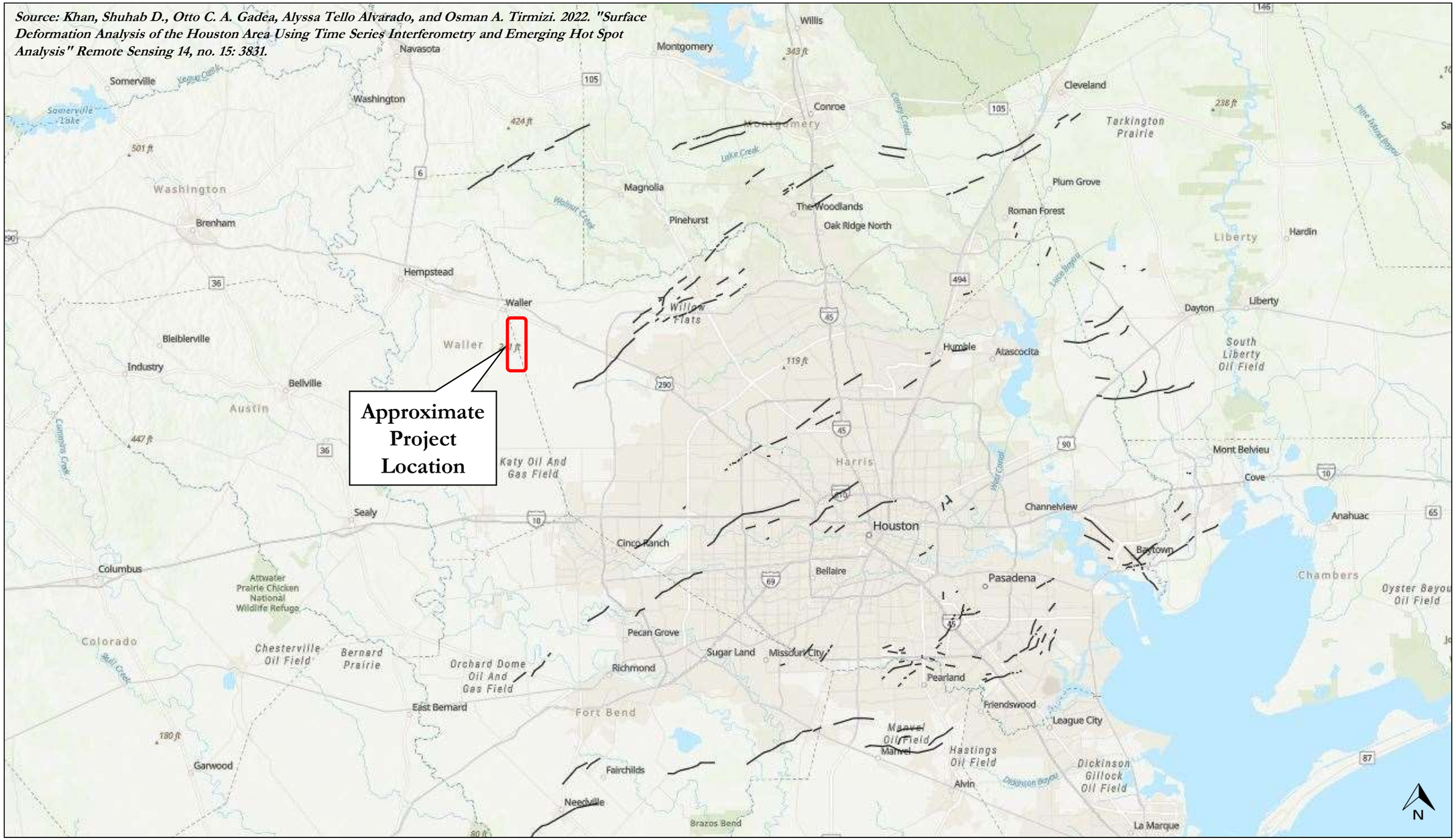
GEOLOGY MAP
WALLER COUNTY MATHIS ROAD RECONSTRUCTION
(Project #23206)

PROJECT NO.: HGT250070	DRAWING NO.: PLATE 3

Source: Khan, Shuhab D., Otto C. A. Gadea, Alyssa Tello Alvarado, and Osman A. Tirmizi. 2022. "Surface Deformation Analysis of the Houston Area Using Time Series Interferometry and Emerging Hot Spot Analysis" Remote Sensing 14, no. 15: 3831.



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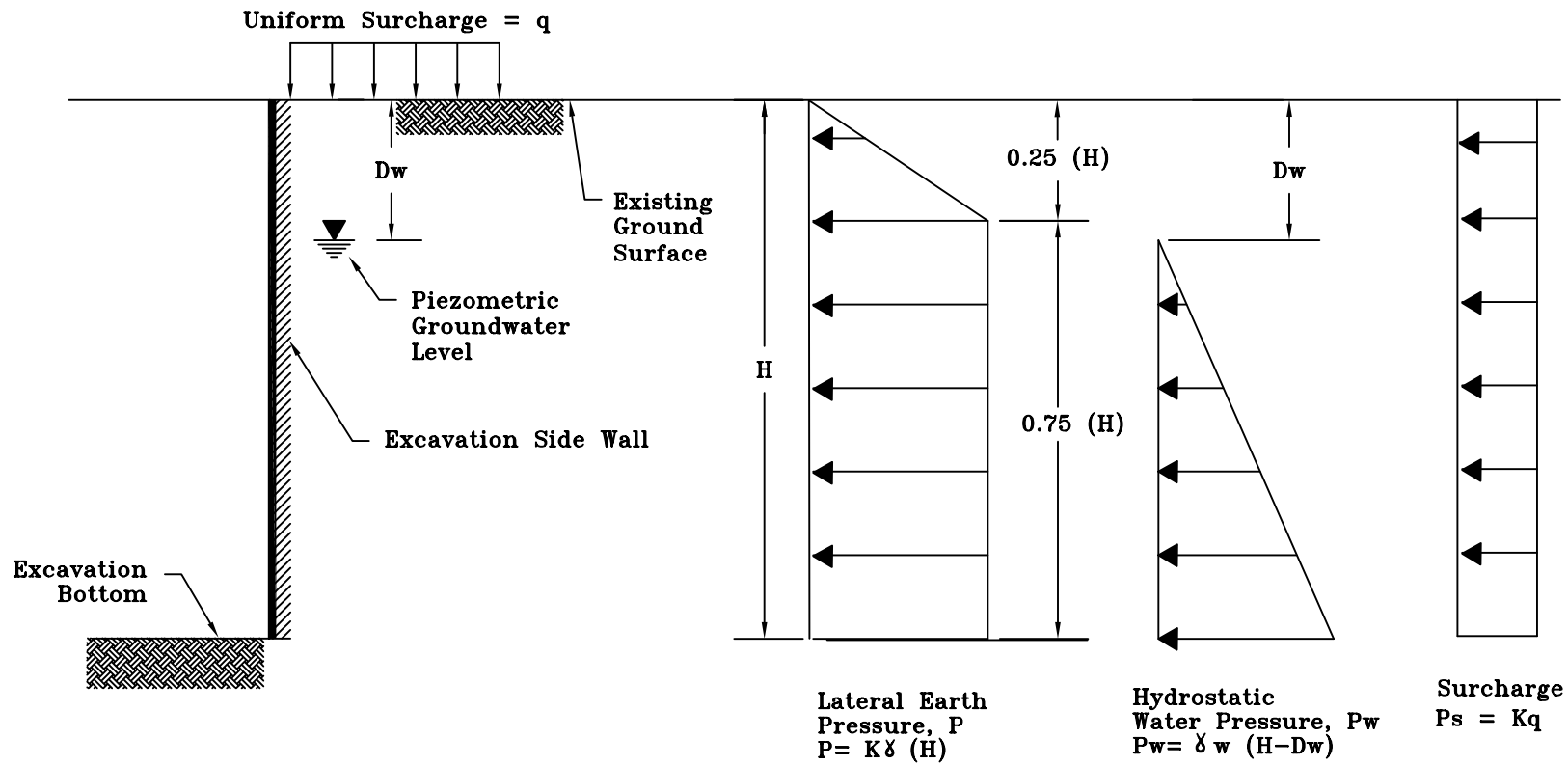
FAULT MAP
WALLER COUNTY MATHIS ROAD RECONSTRUCTION
(Project #23206)

PROJECT NO.:	DRAWING NO.:
HGT250070	PLATE 4



H, (ft) = Depth to Excavation Bottom

Ps, (psf) = Surcharge loading adjacent to Excavation wall

Dw, (ft) = Depth to groundwater below Existing grade

= Zero for temporary excavation

K = Lateral Earth Pressure coefficient

= Ka "active" for short–term conditions (use 0.50)

= Ko "at rest" for long–term conditions (use 1.0)

ɣ, (pcf) = Total unit weight above water table or submerged unit weight below groundwater level

ɣw, (pcf) = Unit weight of water = 62.4 pcf

Note: The pressure diagram shown is not appropriate for design of cantilever walls.

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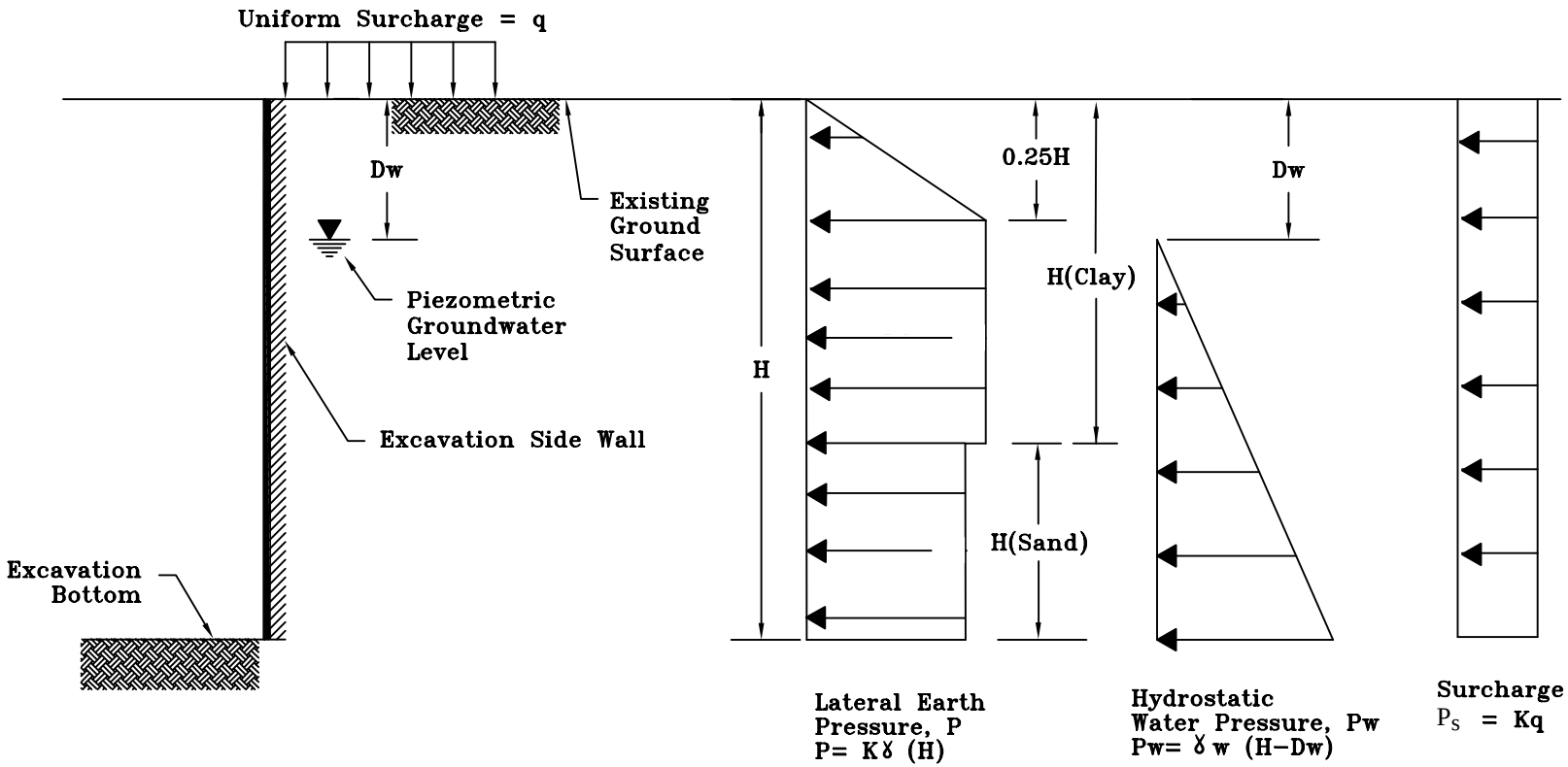
BRACED EXCAVATION
LATERAL EARTH PRESSURE DIAGRAM (CLAY)
WALLER COUNTY MATHIS ROAD RECONSTRUCTION

PROJECT NO.: HGT250070

DRAWING NO.: PLATE 5A



H, (ft) = Depth to Excavation Bottom

Ps, (psf) = Surcharge loading adjacent to Excavation wall

Dw, (ft) = Depth to groundwater below Existing grade

= Zero for temporary excavation

ɣ, (pcf) = Total unit weight above water table or submerged unit weight below groundwater level

ɣw, (pcf) = Unit weight of water = 62.4 pcf

Kc = Lateral Earth Pressure coefficient of clay

= Ka "active" for short–term conditions (use 0.50)

= Ko "at rest" for long–term conditions (use 1.0)

Ks = Lateral Earth Pressure coefficient of sand

= Ka "active" for short–term conditions (use 0.35)

= Ko "at rest" for long–term conditions (use 0.50)

Note: The pressure diagram shown is not appropriate for design of cantilever walls.

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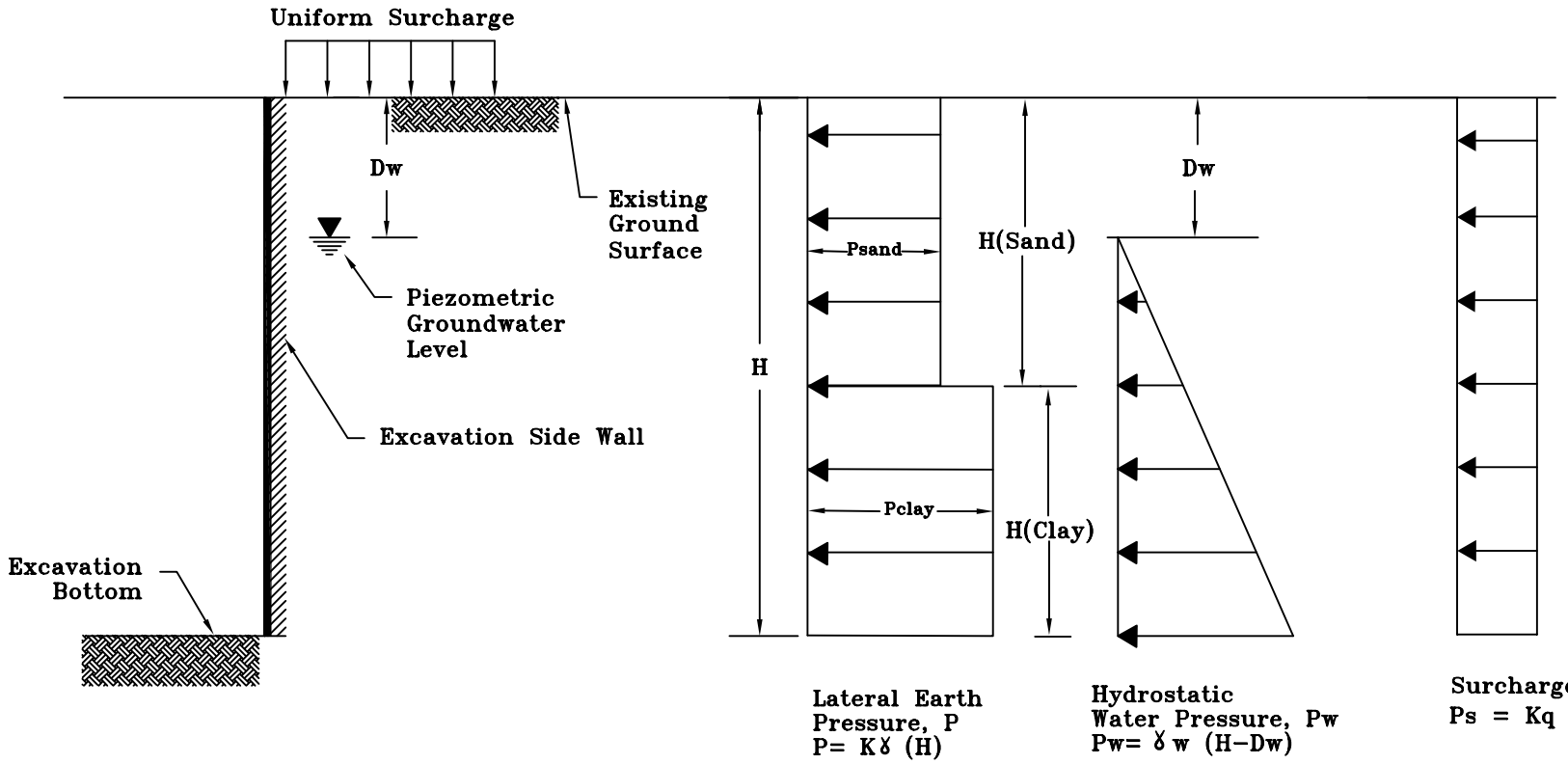
BRACED EXCAVATION

LATERAL EARTH PRESSURE DIAGRAM (CLAY OVER SAND)

WALLER COUNTY MATHIS ROAD RECONSTRUCTION

PROJECT NO.:	DRAWING NO.:
HGT250070	PLATE 5B



H, (ft) = Depth to Excavation Bottom

Ps, (psf) = Surcharge loading adjacent to Excavation wall

Dw, (ft) = Depth to groundwater below Existing grade

= Zero for temporary excavation

ɣ, (pcf) = Total unit weight above water table or submerged unit weight below groundwater level

ɣw, (pcf) = Unit weight of water = 62.4 pcf

Ks = Lateral Earth Pressure coefficient of sand

= Ka "active" for short–term conditions (use 0.35)

= Ko "at rest" for long–term conditions (use 0.50)

Kc = Lateral Earth Pressure coefficient of clay

= Ka "active" for short–term conditions (use 0.50)

= Ko "at rest" for long–term conditions (use 1.0)

Note: **The pressure diagram shown is not appropriate for design of cantilever walls.**

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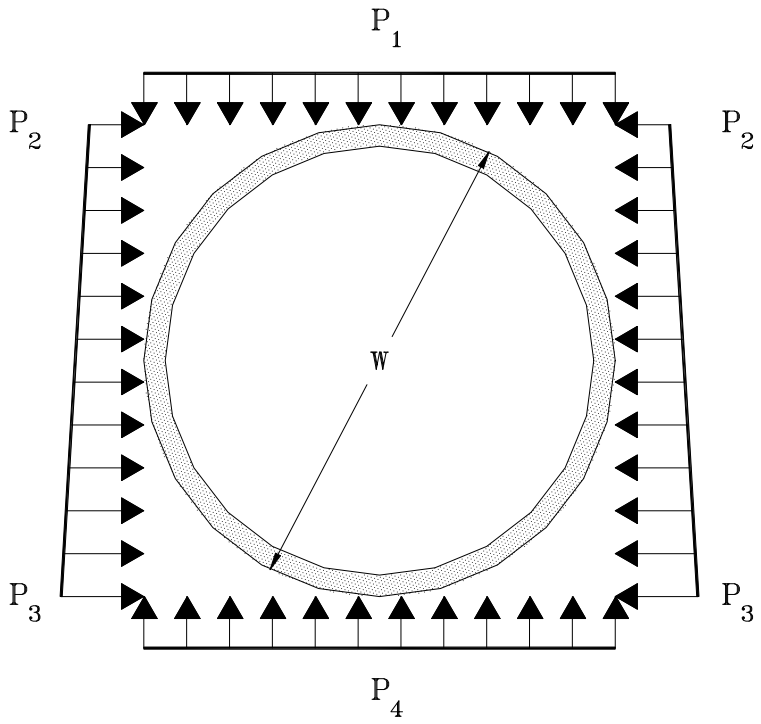
BRACED EXCAVATION

LATERAL EARTH PRESSURE DIAGRAM (SAND OVER CLAY)

WALLER COUNTY MATHIS ROAD RECONSTRUCTION

PROJECT NO.:	DRAWING NO.:
HGT250070	PLATE 5C



For

$D_w \leq H$

$P_1 = \gamma D_w + (H - D_w)(\gamma - \gamma_w) + P_s + (H - D_w)\gamma_w$

$P_2 \equiv [\gamma D_w + (H - D_w)(\gamma - \gamma_w) + P_s]K_o + (H - D_w)\gamma_w$

$P_3 = [\gamma D_w + (H + W - D_w)(\gamma - \gamma_w) + P_s]K_o + (H + W - D_w)\gamma_w$

$P_4 = \gamma D_w + (H + W - D_w)(\gamma - \gamma_w) + P_s + (H + W - D_w)\gamma_w$

For

$H < D_w < H + W$

$P_1 \equiv H\gamma + P_s$

$P_2 = (\gamma H + P_s)K_o$

$P_3 = [\gamma D_w + (H + W - D_w)(\gamma - \gamma_w) + P_s]K_o + (H + W - D_w)\gamma_w$

$P_4 = \gamma D_w + (H + W - D_w)(\gamma - \gamma_w) + P_s + (H + W - D_w)\gamma_w$

For

$D_w \geq (H + W)$

$P_1 \equiv H\gamma + P_s$

$P_2 = (\gamma H + P_s)K_o$

$P_3 = [(H + W)\gamma + P_s]K_o$

$P_4 = (H + W)\gamma + P_s$

Where

P_1, P_2, P_3 = Pressure imposed on pipe, psf

D_w = Depth of groundwater, feet

H = Depth of top of pipe from ground surface, feet

W = Diameter of pipe, feet

γ = Total Unit weight of soil, pcf

γ_w = Unit weight of water, pcf

P_s = Surcharge load, psf

K_o = Coefficient of earth pressure, (1.0 for clays and 0.5 for sands)

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DATE: 8/12/2025	APPROVED BY: FA	PREPARED BY: AP

RIGID PIPE LOADS

WALLER COUNTY MATHIS ROAD RECONSTRUCTION

PROJECT NO.: HGT250070	DRAWING NO.: PLATE 6

APPENDIX A

BORING LOGS AND KEY TO TERMS & SYMBOLS

LOG OF BORING B-1

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 29.985889°; -95.908139°

COMPLETION DEPTH: 15 FT

SURFACE ELEVATION: 226.0 FT

DATE: 6/25/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	2.5" Asphalt over 6.5" Base							
225		Brown, reddish brown, and gray, CLAYEY SAND (SC)		42.3		14	30	14	16
	5	with ferrous stains 4' - 6'							
220									
	10	Very stiff, light brown, reddish brown, and gray, SANDY LEAN CLAY (CL)		54.8	109	15	39	15	24
215									
	15								

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: EG Drillers Logged By: JP

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-2

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 29.987278°; -95.908167°

COMPLETION DEPTH: 16 FT

SURFACE ELEVATION: 221.0 FT

DATE: 7/2/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 16 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	3" Asphalt over 7" Base							
220		Brown, reddish brown, and gray, CLAYEY SAND (SC)		49.5		18	43	18	25
	5								
215						18			
	10								
210		with calcareous nodules 12' - 16'		43.0		14	51	15	36
	15								
205									

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: Soiltech Logged By: BKH

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-3

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 29.988611°; -95.908167°

COMPLETION DEPTH: 15.5 FT

SURFACE ELEVATION: 214.0 FT

DATE: 6/25/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15.5 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	2.5" Asphalt over 7" Base							
		Very dense, brown, light brown, reddish brown, and gray, SILTY SAND (SM)	50						
			91	31.5		9	NP	NP	NP
210	5		50						
		Stiff to very stiff, gray, light brown, and reddish brown, SANDY LEAN CLAY (CL)							
205	10			54.2	106	20	48	15	33
			24						
200	15								

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: EG Drillers Logged By: JP

HVJ Associates, Inc.

COH HGT250070.GPJ 8/18/25

LOG OF BORING B-4

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 29.990000°; -95.908167°

COMPLETION DEPTH: 15 FT

SURFACE ELEVATION: 212.0 FT

DATE: 6/25/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	2.5" Asphalt over 6.5" Base							
210		Very dense, brown and dark brown, CLAYEY SAND (SC)	50	35.9		11	19	11	8
	5		50						
205		Gray, light brown and reddish brown, SILTY CLAYEY SAND (SC-SM)		31.9		10	14	10	4
	10								
200									
	15								

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: EG Drillers Logged By: JP

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-5

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 29.991389°; -95.908194°

COMPLETION DEPTH: 15.5 FT

SURFACE ELEVATION: 212.0 FT

DATE: 6/25/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15.5 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	3" Asphalt over 8" Base							
210		Loose to dense, brown, gray, and light brown, SILTY SAND (SM)	34						
			10	20.9		10	NP	NP	NP
	5		4						
205		with gravel 8' - 10'							
	10	Light brown, gray and reddish brown, CLAYEY SAND (SC)		32.1		12	26	12	14
200									
	15								

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: EG Drillers Logged By: JP

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-6

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 29.992722°; -95.908222°

COMPLETION DEPTH: 15.5 FT

SURFACE ELEVATION: 217.0 FT

DATE: 6/25/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15.5 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	3" Asphalt over 5.5" Base							
215		Medium dense, brown, light brown, and reddish brown, SILTY SAND (SM)	14	26.5		11	NP	NP	NP
	5								
210									
	10	Medium dense to dense, gray, reddish brown, and light brown, CLAYEY SAND (SC)		27.8		15	28	15	13
205			36						
▽	15		18						

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: 14.0 FT; AFTER 10 MIN. AT 8.8 FT

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: EG Drillers Logged By: JP

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-7

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 29.994111°; -95.908278°

COMPLETION DEPTH: 15.5 FT

SURFACE ELEVATION: 222.0 FT

DATE: 7/2/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15.5 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	3" Asphalt over 9" Base							
220		Medium dense to dense, brown, dark brown, reddish brown, and gray, CLAYEY SAND (SC) with calcareous nodules 1' - 2.5'	12	46.7		16	31	11	20
	5	with ferrous stains 4' - 15.5'				17			
215									
	10			37.9		15	40	12	28
210									
	15		45						

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: Soiltech Logged By: BKH

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-8

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 29.995472°; -95.908278°

COMPLETION DEPTH: 15.5 FT

SURFACE ELEVATION: 224.0 FT

DATE: 6/25/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15.5 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0			3" Asphalt over 7" Base							
				Loose to medium dense, brown, light brown, reddish brown, and gray, CLAYEY SAND (SC)	6						
220	5				8	37.8		10	26	14	12
215	10					43.9		14 13	36	15	21
210	15				22 16						

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: EG Drillers Logged By: JP

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-9

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 29.996833°; -95.908333°

COMPLETION DEPTH: 16 FT

SURFACE ELEVATION: 219.0 FT

DATE: 7/2/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 16 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	3" Asphalt over 9.5" Base							
		Loose to medium dense, brown, dark brown, reddish brown, and gray, SILTY SAND (SM)	27						
215			7	26.5		11	NP	NP	NP
	5	with ferrous stains 4.5' - 8'	4			11			
		Brown, reddish brown and gray, CLAYEY SAND (SC)							
210				18.3		8	26	10	16
	10	with ferrous stains 8' - 12'				12			
		with calcareous nodules 12' - 16'							
205	15								

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: Soiltech Logged By: BKH

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-10

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 29.998167°; -95.908306°

COMPLETION DEPTH: 15.5 FT

SURFACE ELEVATION: 215.0 FT

DATE: 6/25/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15.5 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
215	0	2.5" Asphalt over 9" Base							
		Medium dense to dense, brown, gray, and light brown, SILTY SAND (SM)	20	30.3		7	NP	NP	NP
			47						
210	5		17						
205	10	Medium dense, gray and light brown, SILTY CLAYEY SAND (SC-SM)		24.3		10	19	13	6
200	15		26						

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: EG Drillers Logged By: JP

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-11

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 29.999500°; -95.908389°

COMPLETION DEPTH: 15.5 FT

SURFACE ELEVATION: 214.0 FT

DATE: 7/2/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15.5 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	3" Asphalt over 10" Base							
		Loose to medium dense, brown, gray, and reddish brown, SILTY SAND (SM)	27						
210			18	20.0		6	NP	NP	NP
	5	with ferrous stains 4.5' - 8'	5						
		Dense, reddish brown, gray and brown, CLAYEY SAND (SC)							
205		with ferrous stains 8' - 15.5'		42.8		12	31	17	14
	10								
						13			
200									
	15		38						

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: Soiltech Logged By: BKH

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-12

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 30.000861°; -95.908333°

COMPLETION DEPTH: 15.5 FT

SURFACE ELEVATION: 213.0 FT

DATE: 6/26/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15.5 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	2.5" Asphalt over 6.5" Base							
		Loose to medium dense, brown, light brown, and gray, SILTY SAND (SM)	23						
210			12	20.8		9	NP	NP	NP
	5		8						
		with gravel 6' - 8'							
205		Medium dense, reddish brown, gray, and light brown, CLAYEY SAND (SC) with gravel 8' - 14'		49.3		20	38	21	17
	10								
200									
	15		18						

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: EG Drillers Logged By: JP

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-13

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 30.002222°; -95.908417°

COMPLETION DEPTH: 15.5 FT
CAVE-IN DEPTH: 9 FT

SURFACE ELEVATION: 212.0 FT

DATE: 7/2/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 15.5 FT
WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	3" Asphalt over 5" Base							
210		Medium dense to dense, brown, dark brown, reddish brown, and gray, SILTY SAND (SM)	43						
			23	20.0		8	NP	NP	NP
		with ferrous stains 4' - 8'							
	5		11						
205									
		Loose to dense, gray and reddish brown, CLAYEY SAND (SC) with ferrous stains 8' - 12'							
				45.1		17	33	15	18
▽	10								
200			6			17			
	15		44						

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER DURING DRILLING: 10.0 FT; AFTER 10 MIN. AT 5.8 FT
▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: Soiltech Logged By: BKH

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-14

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 30.003611°; -95.908389°

COMPLETION DEPTH: 15 FT

SURFACE ELEVATION: 209.0 FT

DATE: 6/26/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0			2.5" Asphalt over 9.5" Base							
				Loose to medium dense, brown, light brown, reddish brown, and gray, SILTY SAND (SM)	30	24.4		8	NP	NP	NP
205	5				9						
				Gray and light brown, CLAYEY SAND (SC)		37.5		14	22	13	9
200	10										
195	15										

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: EG Drillers Logged By: JP

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-15

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 30.004944°; -95.908167°

COMPLETION DEPTH: 15.5 FT

SURFACE ELEVATION: 208.0 FT

DATE: 7/1/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15.5 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	7" Asphalt over 10" Base							
205		Firm to very stiff, dark brown and dark gray, SANDY LEAN CLAY (CL) with ferrous stains 1.5' - 3'		56.8	118	16	21	11	10
			23						
	5	with ferrous stains 4.5' - 8'							
			11						
			21						
200		Dense to very dense, gray and brown, CLAYEY SAND (SC) with ferrous stains 8' - 15.5'		41.0		17	31	13	18
	10								
195			94			11			
	15		31						

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: Soiltech Logged By: BKH

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-16

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 30.006278°; -95.907778°

COMPLETION DEPTH: 15.5 FT

SURFACE ELEVATION: 205.0 FT

DATE: 6/26/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15.5 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
205	0	2.5" Asphalt over 6" Base							
		Loose to dense, brown, dark brown, and light brown, SILTY SAND (SM)	25						
			34	22.2		11	NP	NP	NP
200	5		7						
						12			
195	10	Medium dense, gray and light brown, CLAYEY SAND (SC)		23.7		11	18	10	8
190	15		15						

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: EG Drillers Logged By: JP

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-17

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 30.007639°; -95.907611°

COMPLETION DEPTH: 15 FT

SURFACE ELEVATION: 206.0 FT

DATE: 6/26/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	2.5" Asphalt over 11" Base							
205		Medium dense to dense, brown, light brown, and gray, SILTY SAND (SM)	40	21.9		9	NP	NP	NP
			18						
	5		10						
200									
		Gray and light brown, CLAYEY SAND (SC)		36.6		13	21	11	10
	10								
195									
	15								

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: EG Drillers Logged By: JP

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-18

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 30.009000°; -95.907444°

COMPLETION DEPTH: 15.5 FT
CAVE-IN DEPTH: 8.4 FT

SURFACE ELEVATION: 207.0 FT

DATE: 7/1/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 15.5 FT
WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	3" Asphalt over 12.5" Base							
205		Loose to very dense, dark brown, reddish brown, and gray, SILTY SAND (SM)	38						
			5	20.5		8	NP	NP	NP
	5	with ferrous stains 4.5' - 7.5'	16						
		with gravel 4.5' - 10'							
200			26			8			
			67						
	10	Dense to very dense, brown and gray, SILTY CLAYEY SAND (SC-SM) with gravel 10' - 15.5'	45	13.7		10	18	12	6
▽ 195			63						
	15		75						

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER DURING DRILLING: 12.0 FT; AFTER 10 MIN. AT 8.3 FT
▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: Soiltech Logged By: BKH

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-19

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 30.010361°; -95.907278°

COMPLETION DEPTH: 16 FT

SURFACE ELEVATION: 206.0 FT

DATE: 7/1/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 16 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	2.5" Asphalt over 8" Base							
205		Loose to dense, dark gray and brown, SILTY SAND (SM)	40	22.8		9	NP	NP	NP
			35						
	5		8						
200		with ferrous stains 6' - 16'	29						
		Brown and gray, SILTY CLAYEY SAND (SC-SM)		21.3		13	20	14	6
	10								
195						15			
	15								
190									

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: Soiltech Logged By: BKH

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-20

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 30.011694°; -95.907056°

COMPLETION DEPTH: 15.5 FT

SURFACE ELEVATION: 207.0 FT

DATE: 6/26/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15.5 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	2.5" Asphalt over 7.5" Base							
205		Medium dense, gray, light brown, and reddish brown, CLAYEY SAND (SC)	11						
			13	37.7		16	34	15	19
	5								
200									
	10			31.3		17	32	15	17
195									
	15		20						

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: EG Drillers Logged By: JP

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-21

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 30.013056°; -95.907250°

COMPLETION DEPTH: 15.5 FT

SURFACE ELEVATION: 207.0 FT

DATE: 6/27/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15.5 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	2.5" Asphalt over 11" Base							
205		Loose to medium dense, brown and gray, SILTY CLAYEY SAND (SC-SM)	19	26.8		9	17	11	6
	5		8						
200		Medium dense, reddish brown, light brown, and gray, CLAYEY SAND (SC)		27.1		13	32	13	19
	10		22			13			
195			29						
	15								

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: EG Drillers Logged By: JP

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-22

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 30.014417°; -95.907667°

COMPLETION DEPTH: 15.5 FT

SURFACE ELEVATION: 221.0 FT

DATE: 7/1/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15.5 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	3.5" Asphalt over 4.5" Base							
220		Very dense, gray, reddish brown, and brown, CLAYEY SAND (SC) with ferrous stains 0.75' - 15.5'				12			
				40.5		13	32	18	14
	5								
215									
			76	29.7		12	29	18	11
	10								
210			80						
			54			13			
	15		69						

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: Soiltech Logged By: BKH

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-23

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 30.015750°; -95.907750°

COMPLETION DEPTH: 15.5 FT

SURFACE ELEVATION: 225.0 FT

DATE: 6/27/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15.5 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
225	0	2.5" Asphalt over 11" Base							
		Loose to medium dense, brown, reddish brown, and gray, SILTY SAND (SM)	12	32.1		9	NP	NP	NP
			4						
220	5		11			16			
215	10	Loose to medium dense, light brown and reddish brown, CLAYEY SAND (SC)	20	22.5		12	24	13	11
			24						
210	15		9						

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: EG Drillers Logged By: JP

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-24

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 30.017111°; -95.907806°

COMPLETION DEPTH: 15.5 FT

SURFACE ELEVATION: 232.0 FT

DATE: 6/30/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15.5 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	2.5" Asphalt over 6.5" Base							
230		Loose to medium dense, brown, reddish brown, and gray, CLAYEY SAND (SC) with ferrous stains 1' - 15.5'	9						
			7	46.6		16	39	17	22
	5					15			
225									
				37.2		14	32	16	16
	10								
			18						
220									
			23			12			
	15		24						

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: Soiltech Logged By: BKH

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-25

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 30.018444°; -95.907778°

COMPLETION DEPTH: 15.5 FT

SURFACE ELEVATION: 235.0 FT

DATE: 6/27/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15.5 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
235	0	2.5" Asphalt over 14.5" Base							
		Medium dense, brown, reddish brown, and light brown, CLAYEY SAND (SC)	10	35.9		19	39	21	18
			13						
230	5		12			17			
		Stiff to hard, reddish brown, light brown, and gray, SANDY LEAN CLAY (CL)		62.8	116	16	42	17	25
225	10		31						
			51						
220	15		9						

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: EG Drillers Logged By: JP

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-26

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 30.019833°; -95.907806°

COMPLETION DEPTH: 15.5 FT

SURFACE ELEVATION: 229.0 FT

DATE: 6/27/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15.5 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	4" Asphalt over 10.5" Base							
225	5	Medium dense to dense, light brown, reddish brown, and gray, CLAYEY SAND (SC) with ferrous stains 1.5' - 6'	10	27.9		14	38	18	20
220	10		16	34.2		15	36	15	21
215	15		50 18						

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: EG Drillers Logged By: JP

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

LOG OF BORING B-27

PROJECT: Mathis Road

PROJECT NO.: HGT250070

LOCATION: 30.021167°; -95.907833°

COMPLETION DEPTH: 15 FT

SURFACE ELEVATION: 231.0 FT

DATE: 6/27/2025

SAMPLER: Shelby Tube/Split Spoon

DRY AUGER: 0 TO 15 FT

WET ROTARY: N/A TO N/A FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	4.5" Asphalt over 6.5" Base							
230		Loose, brown, reddish brown, and light brown, SILTY CLAYEY SAND (SC-SM)	6	38.5		14	21	14	7
		with ferrous stains 2.5' - 4'	7						
	5	Very stiff, reddish brown, light brown, and gray, SANDY LEAN CLAY (CL)				19			
225									
				50.5		16	38	18	20
	10								
220						13			
	15								

UNDRAINED SHEAR STRENGTH, TSF

○ HAND PENETROMETER

● UNCONFINED COMPRESSION

■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION

△ TORVANE

0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:

▽ FREE WATER DURING DRILLING: Not Observed

▼ WATER DEPTH 24 HOURS AFTER DRILLING: Not Recorded

Note:
Surface elevation was estimated from Topoview developed by USGS.

Drilled By: EG Drillers Logged By: JP

HVJ Associates, Inc.

COH HGT250070.GPJ 8/15/25

SOIL SYMBOLS

Soil Types


Clay


Silt


Sand


Gravel

Modifiers


Clayey


Silty


Sandy


Cemented

Construction Materials


Asphaltic Concrete


Stabilized Base


Fill or Debris


Portland Cement Concrete

SAMPLER TYPES


Thin Walled Shelby Tube


No Recovery


Split Barrel


Core


Liner Tube


Jar Sample

WATER LEVEL SYMBOLS

Groundwater level after drilling in open borehole or piezometer


Groundwater level determined during drilling operations

SOIL GRAIN SIZE

Classification	Particle Size	Particle Size or Sieve No. (U.S. Standard)
Clay	< 0.002 mm	< 0.002 mm
Silt	0.002 - 0.075 mm	0.002 mm - #200 sieve
Sand	0.075 - 4.75 mm	#200 sieve - #4 sieve
Gravel	4.75 - 75 mm	#4 sieve - 3 in.
Cobble	75 - 200 mm	3 in. - 8 in.
Boulder	> 200 mm	> 8 in.

DENSITY OF COHESIONLESS SOILS

Descriptive Term	Penetration Resistance "N" * Blows/Foot
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	> 50

CONSISTENCY OF COHESIVE SOILS

Consistency	Undrained Shear Strength (tsf)	Penetration Resistance "N" * Blows/Foot
Very Soft	0 - 0.125	0 - 2
Soft	0.125 - 0.25	2 - 4
Firm	0.25 - 0.5	4 - 8
Stiff	0.5 - 1.0	8 - 16
Very Stiff	1.0 - 2.0	16 - 32
Hard	> 2.0	> 32

PENETRATION RESISTANCE

3/6	Blows required to penetrate each of three consecutive 6-inch increments per ASTM D-1586 *
50/4"	If more than 50 blows are required, driving is discontinued and penetration at 50 blows is noted
0/18"	Sampler penetrated full depth under weight of drill rods and hammer

* The N value is taken as the blows required to penetrate the final 12 inches

TERMS DESCRIBING SOIL STRUCTURE

Slickensided	Fracture planes appear polished or glossy, sometimes striated
Fissured	Breaks along definite planes of fracture with little resistance to fracturing
Inclusion	Small pockets of different soils, such as small lenses of sand scattered through a mass of clay
Parting	Inclusion less than 1/4 inch thick extending through the sample
Seam	Inclusion 1/4 inch to 3 inches thick extending through the sample
Layer	Inclusion greater than 3 inches thick extending through the sample
Laminated	Soil sample composed of alternating partings of different soil type
Stratified	Soil sample composed of alternating seams or layers of different soil type
Intermixed	Soil sample composed of pockets of different soil type and laminated or stratified structure is not evident
Calcareous	Having appreciable quantities of calcium carbonate
Ferrous	Having appreciable quantities of iron
Nodule	A small mass of irregular shape

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KEY TO TERMS AND SYMBOLS
USED ON BORING LOGS
WALLER COUNTY - MATHIS ROAD RECONSTRUCTION

PROJECT NO.: HGT250070

DRAWING NO.: APPENDIX A-28

APPENDIX B

SUMMARY OF LABORATORY TEST RESULTS

Company Name: HVJ Associates, Inc.
Project: Waller County Mathis Road Reconstruction
Location: Waller County, Texas
HVJ Project Number: HGT250070

Borehole	Depth (feet)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% Passing #200 Sieve	Moisture Content (%)	Total Unit Weight (pcf)	Shear Strength (UU) (tsf)	Shear Strength (Pocket Pen) (tsf)
B-1	3	30	14	16	42.3	14			
B-1	9	39	15	24	54.8	15	125	1.47	1.50
B-1	11								1.50
B-1	13								1.17
B-1	14.5								1.33
B-2	1.5	43	18	25	49.5	18			
B-2	7					18			
B-2	11	51	15	36	43.0	14			
B-3	2.8	NP	NP	NP	31.5	9			
B-3	7								1.17
B-3	9								0.83
B-3	11	48	15	33	54.2	20	127	1.78	1.50
B-4	1.5	19	11	8	35.9	11			
B-4	7	14	10	4	31.9	10			
B-5	3.25	NP	NP	NP	20.9	10			
B-5	11	26	12	14	32.1	12			
B-6	1.75	NP	NP	NP	26.5	11			
B-6	9	28	15	13	27.8	15			
B-7	3.25	31	11	20	46.7	16			
B-7	5					17			
B-7	11	40	12	28	37.9	15			
B-8	3.25	26	14	12	37.8	10			
B-8	9					14			
B-8	11	36	15	21	43.9	13			
B-9	3.75	NP	NP	NP	26.5	11			
B-9	5.25					11			
B-9	9	26	10	16	18.3	8			
B-9	11					12			
B-10	1.75	NP	NP	NP	30.3	7			
B-10	11	19	13	6	24.3	10			
B-11	3.75	NP	NP	NP	20.0	6			
B-11	9	31	17	14	42.8	12			
B-11	13					13			
B-12	3.25	NP	NP	NP	20.8	9			
B-12	9	38	21	17	49.3	20			
B-13	3.25	NP	NP	NP	20.0	8			
B-13	9	33	15	18	45.1	17			
B-13	13					17			
B-14	1.75	NP	NP	NP	24.4	8			
B-14	7	22	13	9	37.5	14			
B-15	2.25	21	11	10	56.8	16	137	0.39	0.50
B-15	9	31	13	18	41.0	17			

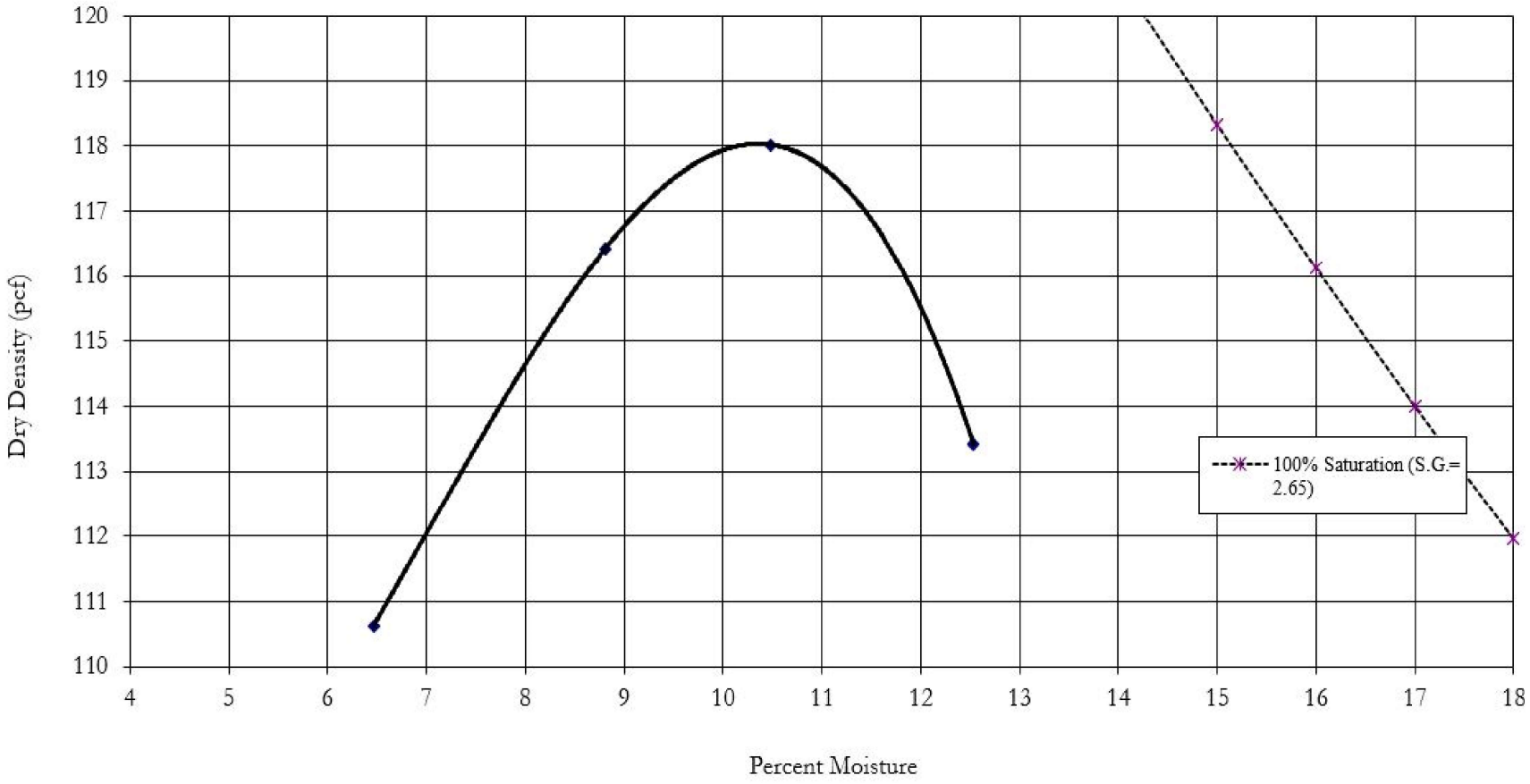
Project: Waller County Mathis Road Reconstruction
Location: Waller County, Texas
HVJ Project Number: HGT250070

Borehole	Depth (feet)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% Passing #200 Sieve	Moisture Content (%)	Total Unit Weight (pcf)	Shear Strength (UU) (tsf)	Shear Strength (Pocket Pen) (tsf)
B-15	12.75					11			
B-16	3.25	NP	NP	NP	22.2	11			
B-16	9					12			
B-16	11	18	10	8	23.7	11			
B-17	2.25	NP	NP	NP	21.9	9			
B-17	9	20	8	12	36.6	13			
B-18	3.75	NP	NP	NP	20.5	8			
B-18	6.75					8			
B-18	10.75	18	12	6	13.7	10			
B-19	1.75	NP	NP	NP	22.8	9			
B-19	9	20	14	6	21.3	13			
B-19	13					15			
B-20	3.25	34	15	9	37.7	16			
B-20	11	32	15	17	31.3	17			
B-21	2.1	17	11	6	26.8	9			
B-21	9	32	13	19	27.1	13			
B-21	13					13			
B-22	1.3					12			
B-22	3	32	18	14	40.5	13			
B-22	8.75	29	18	11	29.7	12			
B-22	12.75					13			
B-23	2.25	NP	NP	NP	32.1	9			
B-23	7					16			
B-23	10.75	24	13	11	22.5	12			
B-24	3.25	39	17	22	46.6	16			
B-24	5					15			
B-24	9	32	16	16	37.2	14			
B-24	12.75					12			
B-25	2.25	39	21	18	35.9	19			
B-25	5.25					17	136	1.89	1.50
B-25	9	42	17	25	62.8	16			
B-26	3.75	38	18	20	27.9	14			
B-26	7					20			
B-26	10.75	36	15	21	34.2	15			
B-27	1.75	21	14	7	38.5	14			
B-27	5					19			1.00
B-27	7								1.33
B-27	9	38	18	20	50.5	16			1.17
B-27	11								1.33
B-27	13					13			1.17
B-27	14.5								1.25
Total:		**54**	**54**	**54**	**54**	**75**	**4**	**4**	**15**

APPENDIX C

STANDARD PROCTOR TEST RESULTS

METHOD OF TEST ☑ STANDARD ASTM D-698 ☐ MODIFIED ASTM D-1557



Sample Location: **Borings B-1 to B-8**

Type of Material: **Dark Brown, Silty Sand (SM)**

Maximum Dry Density: **118.0 pcf**

Opt. Moisture Content: **10.5%**

Date Tested: **07/23/2025**

Liquid Limit: **Non-Plastic**

Plasticity Index: **Non-Plastic**

-200 Sieve %: **21.3**

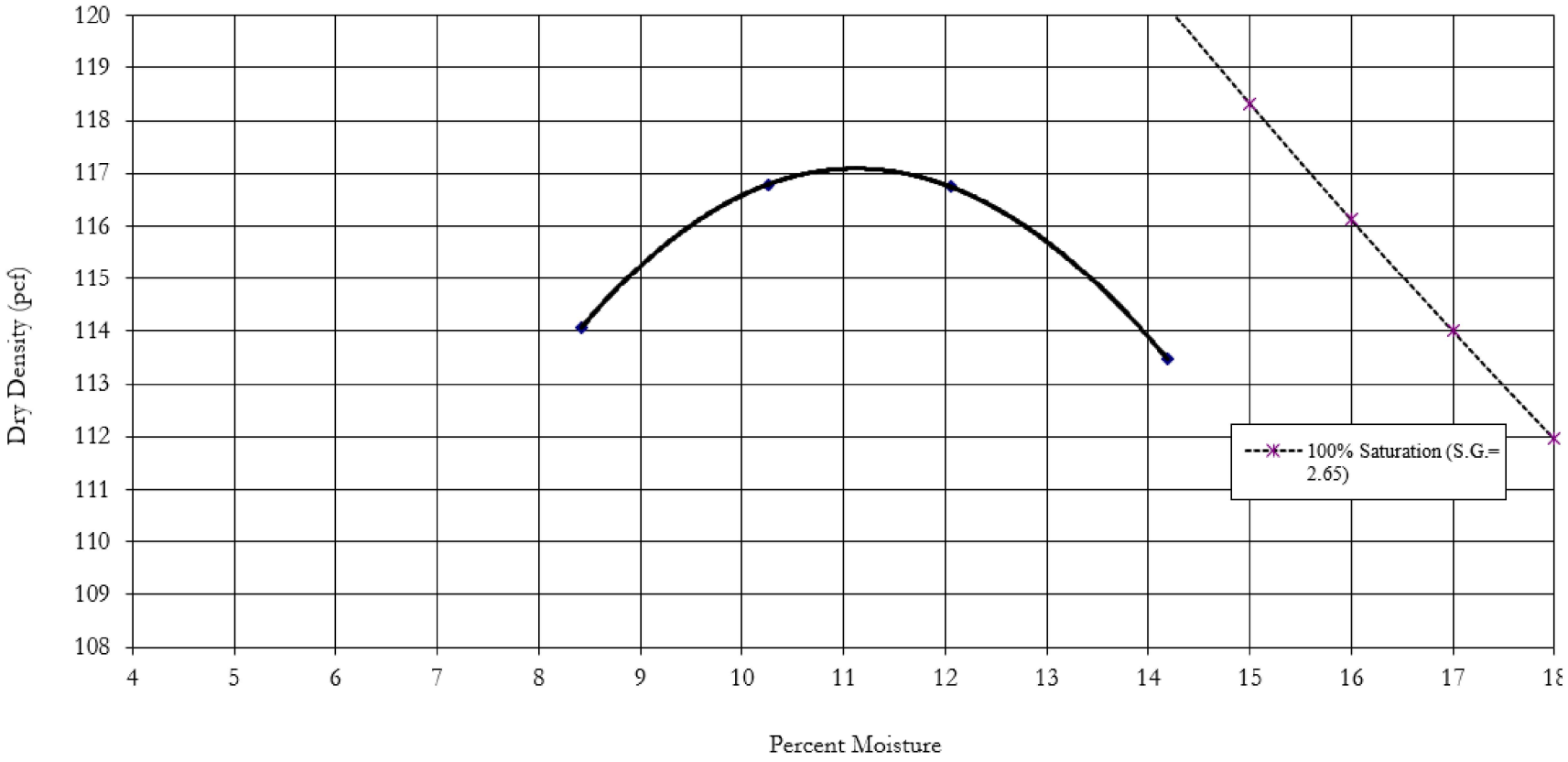
HVJ ASSOCIATES
6120 S. Dairy Ashford Road
Houston, Texas 77072-1010
281.933.7388 Ph
281.933.7293 Fax

DATE: 08/11/2025	APPROVED BY: FA	PREPARED BY: AP

STANDARD PROCTOR TEST RESULTS
WALLER COUNTY MATHIS ROAD RECONSTRUCTION

PROJECT NO.: HGT250070	DRAWING NO.: APPENDIX C-1

METHOD OF TEST ☑ STANDARD ASTM D-698 ☐ MODIFIED ASTM D-1557



Sample Location: **Borings B-17 to B-27**

Type of Material: **Dark Brown, Silty Sand (SM)**

Maximum Dry Density: **117.1 pcf**

Opt. Moisture Content: **11.2%**

Date Tested: **07/25/2025**

Liquid Limit: **Non-Plastic**

Plasticity Index: **Non-Plastic**

-200 Sieve %: **24.3**

HVJ ASSOCIATES
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DATE: 08/11/2025	APPROVED BY: FA	PREPARED BY: AP

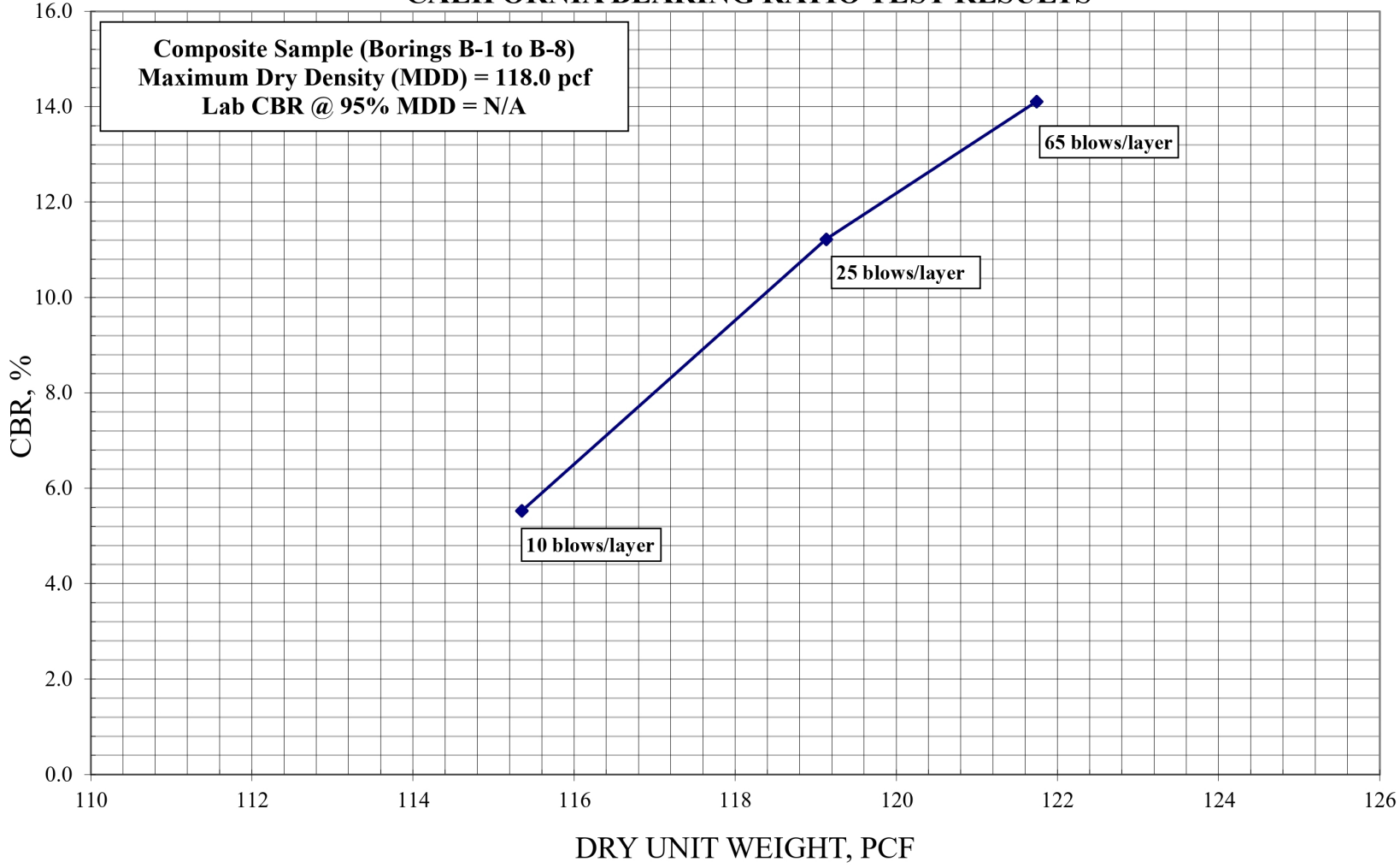
STANDARD PROCTOR TEST RESULTS
WALLER COUNTY MATHIS ROAD RECONSTRUCTION

PROJECT NO.: HGT250070	DRAWING NO.: APPENDIX C-2

APPENDIX D

CBR TEST RESULTS

CALIFORNIA BEARING RATIO TEST RESULTS



HVJ ASSOCIATES
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281.933.7293 Fax

DATE: 08/11/2025	APPROVED BY: FA	PREPARED BY: AP

CBR TEST RESULTS
WALLER COUNTY MATHIS ROAD
RECONSTRUCTION

PROJECT NO.:	DRAWING NO.:
HGT250070	APPENDIX D-1a

CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOILS ASTM D-1883

Project: Waller County Mathis Road Reconstruction

Sample Location: Composite Sample (Boring B-1 to B-8)

Liquid Limit: NP **Plastic Limit:** NP **Plasticity Index:** NP

Method of Compaction: ☒ ASTM D698
☐ ASTM D1557

Sample Condition: ☒ soaked ☐ unsoaked

No. of Blows:	**10**	**25**	**65**
Dry Density Before Soaking (pcf):	112.03	116.19	118.41
Dry Density After Soaking (pcf):	115.35	119.13	121.74
Moisture Content:			
Before Compaction (%):	10.49	10.49	10.51
Top 1-inch Layer After Soaking (%):	13.44	12.16	11.10
Swell (%):	0.002	-0.013	-0.021
Bearing Ratio (%): (☒ soaked ☐ unsoaked)	5.53	11.22	14.11

Surcharge: 10 lbs.

HVJ ASSOCIATES
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Houston, Texas 77072-1010
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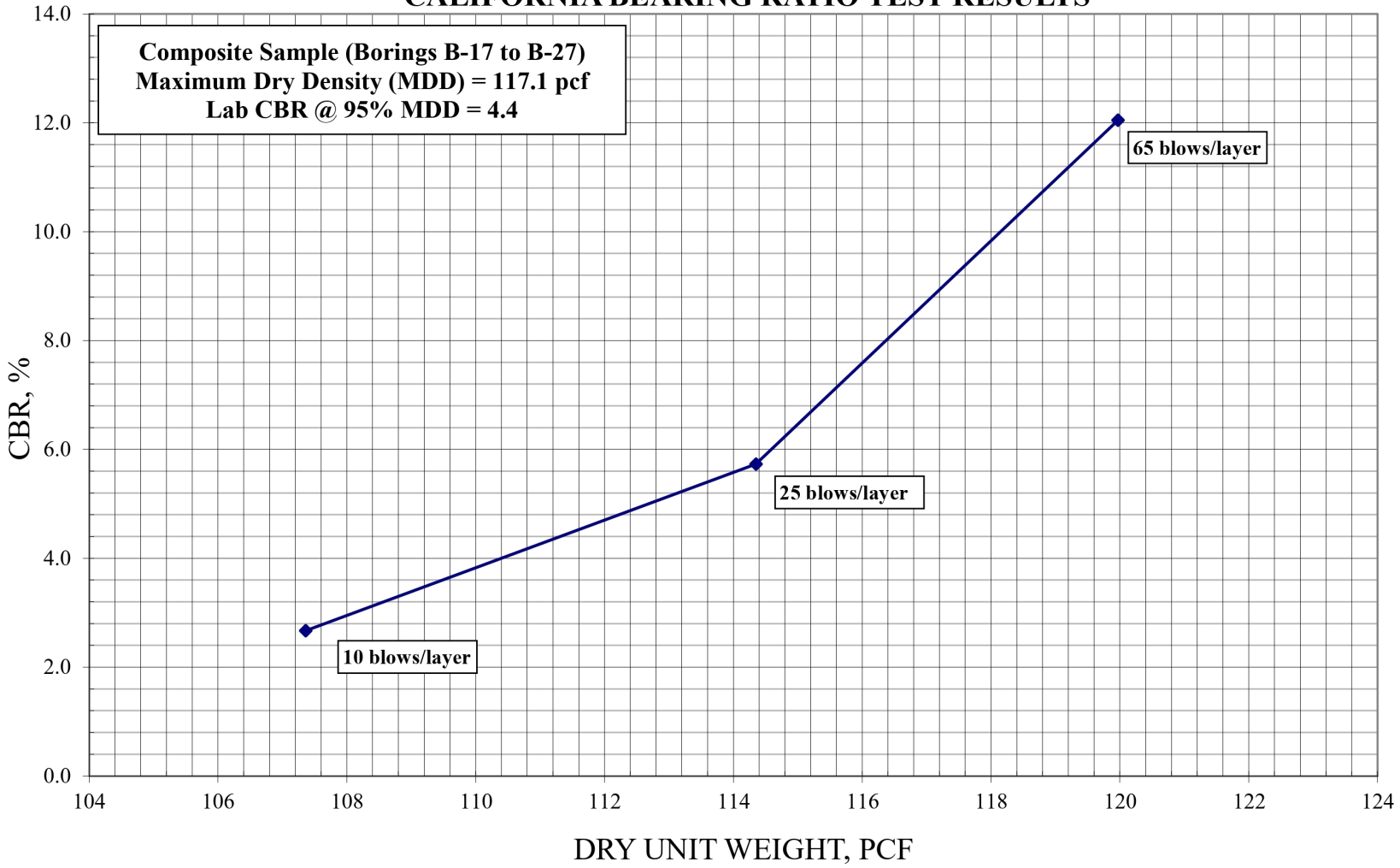
DATE: 08/11/2025	APPROVED BY: FA	PREPARED BY: AP

CBR TEST RESULTS
WALLER COUNTY MATHIS ROAD RECONSTRUCTION

PROJECT NO.: HGT250070	DRAWING NO.: APPENDIX D-1b

CALIFORNIA BEARING RATIO TEST RESULTS



HVJ ASSOCIATES
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281.933.7388 Ph
281.933.7293 Fax

DATE: 08/11/2025	APPROVED BY: FA	PREPARED BY: AP

CBR TEST RESULTS
WALLER COUNTY MATHIS ROAD
RECONSTRUCTION

PROJECT NO.: HGT250070	DRAWING NO.: APPENDIX D-2a

CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOILS ASTM D-1883

Project: Waller County Mathis Road Reconstruction

Sample Location: Composite Sample (Boring B-17 to B-27)

Liquid Limit: NP **Plastic Limit:** NP **Plasticity Index:** NP

Method of Compaction: ☒ ASTM D698
☐ ASTM D1557

Sample Condition: ☒ soaked ☐ unsoaked

No. of Blows:	**10**	**25**	**65**
Dry Density Before Soaking (pcf):	106.23	110.25	117.01
Dry Density After Soaking (pcf):	107.36	114.35	119.97
Moisture Content:			
Before Compaction (%):	11.18	10.99	11.17
Top 1-inch Layer After Soaking (%):	18.27	13.55	12.11
Swell (%):	0.087	0.000	0.000
Bearing Ratio (%): (☒ soaked ☐ unsoaked)	2.67	5.73	12.05

Surcharge: 10 lbs.

HVJ ASSOCIATES
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DATE: 08/11/2025	APPROVED BY: FA	PREPARED BY: AP

CBR TEST RESULTS
WALLER COUNTY MATHIS ROAD RECONSTRUCTION

PROJECT NO.: HGT250070	DRAWING NO.: APPENDIX D-2b

APPENDIX E

DARWIN OUTPUT

1993 AASHTO Pavement Design

DARWin Pavement Design and Analysis System

A Proprietary AASHTOWare
Computer Software Product

Flexible Structural Design Module

Waller County Mathis Road Reconstruction - Flexible Pavement Section

Flexible Structural Design

18-kip ESALs Over Initial Performance Period	418,185
Initial Serviceability	4.2
Terminal Serviceability	2.5
Reliability Level	85 %
Overall Standard Deviation	0.45
Roadbed Soil Resilient Modulus	6,000 psi
Stage Construction	1
Calculated Design Structural Number	3.14 in

Effective Roadbed Soil Resilient Modulus

Period	Description	Roadbed Resilient Modulus (psi)
1	-	6,000

Calculated Effective Modulus 6,000 psi

Simple ESAL Calculation

Performance Period (years)	20
Two-Way Traffic (ADT)	1,274
Number of Lanes in Design Direction	1
Percent of All Trucks in Design Lane	100 %
Percent Trucks in Design Direction	50 %
Percent Heavy Trucks (of ADT) FHWA Class 5 or Greater	3.2 %
Average Initial Truck Factor (ESALs/truck)	2.36
Annual Truck Factor Growth Rate	0 %
Annual Truck Volume Growth Rate	2 %
Growth	Simple
Total Calculated Cumulative ESALs	418,185

Specified Layer Design

Layer	Material Description	Struct Coef. (Ai)	Drain Coef. (Mi)	Thickness (Di)(in)	Width (ft)	Calculated SN (in)
1	Type D HMAC Surface Course	0.44	1	3	12	1.32
2	HMAC Base Course (Black Base)	0.34	1	8	12	2.72
3	Stabilized Subgrade	0.11	1	8	12	0.88
Total	-	-	-	19.00	-	4.92

INDEX OF SHEETS

WALLER COUNTY ENGINEERING DEPARTMENT

WALLER COUNTY ROAD BOND

MATHIS ROAD

PROJECT NO. 23206

PRECINCT 2

RECONSTRUCTION OF A TWO-LANE UNDIVIDED ASPHALT ROADWAY

LIMITS: FROM ROCHEN RD TO HARRIS COUNTY LINE

PROJECT LENGTH = 11,214 FT. = 2.1 MI.

DESIGN SPEED = 45 MPH

JOHN A. AMSLER
COMISSIONER PRECINCT 1

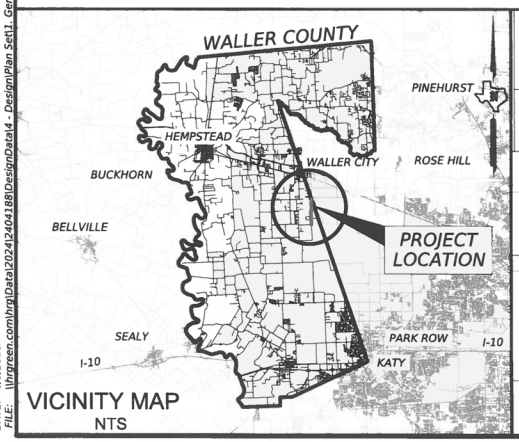
CARBETT J. DUHON III
COUNTY JUDGE

KENDRIC D. JONES
COMISSIONER PRECINCT 3

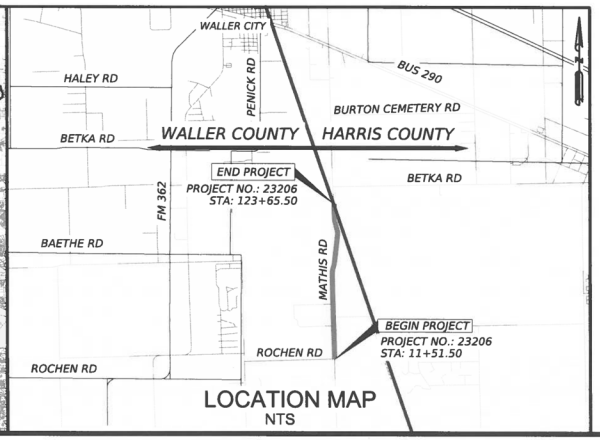
WALTER E. SMITH, P.E., RPLS
COMISSIONER PRECINCT 2

JUSTIN BECKENDORFF
COMISSIONER PRECINCT 4

J. ROSS MCCOLL, P.E. 6-11-26
DATE



VICINITY MAP
NTS



LOCATION MAP
NTS

THE STATE OF TEXAS
WALLER COUNTY

JUNE 2026

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
6/9/2026

ANDREW CRUMP 6/9/2026
DESIGN ENGINEER, P.E. DATE

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

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GENERAL NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE BEGINNING CONSTRUCTION.

2. NOTIFY THE COUNTY ENGINEER IMMEDIATELY IF DISCREPANCIES ARE DISCOVERED IN THE HORIZONTAL CONTROL OR BENCHMARK DATA.

3. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SECURITY TO PROTECT THE PROJECT SITE, CONTRACTOR PROPERTY, EQUIPMENT, AND WORK.

4. THE CONTRACTOR IS RESPONSIBLE FOR CLEANING STREETS OF CONSTRUCTION DIRT AND DEBRIS AT CLOSE OF EACH WORK DAY.

5. THE CONDITION OF THE ROAD AND/OR RIGHT-OF-WAY, UPON COMPLETION OF THE JOB SHALL BE AS GOOD OR BETTER THAN PRIOR TO STARTING WORK.

6. PRIOR TO CONSTRUCTION, THE CONTRACTOR, ALONG WITH CONCURRENCE FROM THE ENGINEER, SHALL AGREE TO LAY-DOWN AND/OR STAGING AREA LOCATIONS.

7. THE CONTRACTOR SHALL NOTIFY ALL PROPERTY OWNERS A MINIMUM OF 24 HOURS PRIOR TO BLOCKING DRIVEWAYS OR ENTERING UTILITY EASEMENTS. ACCESS TO DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.

8. TRAFFIC INGRESS AND EGRESS FOR DRIVEWAYS AND PEDESTRIAN ACCESS FACILITIES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION WITH ALL WEATHER SURFACES.

9. THE CONTRACTOR SHALL REMOVE ANY POSTS, PLANTERS, PERMANENT TRASH CONTAINERS, CULVERTS, ETC. OR SECTIONS THEREOF, THAT ENCROACH WITHIN THE COUNTY'S RIGHT-OF-WAY.

   ANY DAMAGE CAUSE BY THE CONTRACTOR TO SUCH ITEMS LOCATED OUTSIDE THE COUNTY'S RIGHT-OF-WAY, SHALL BE REPLACED WITH LIKE-KIND OR BETTER AT THE CONTRACTOR'S EXPENSE. ALSO, IF THESE ITEMS ARE LOCATED WITHIN THE PROJECT RIGHT-OF-WAY AND DESIGNATED TO REMAIN, ANY DAMAGE CAUSED BY THE CONTRACTOR TO SUCH ITEMS, SHALL BE REPLACED WITH LIKE-KIND OR BETTER AT THE CONTRACTOR'S EXPENSE.

   TREES, BUSHES, SHRUBBERY, AND OTHER DAMAGED PLANTINGS DESIGNATED TO REMAIN, SHALL BE REPLACED WITHIN 72 HOURS OF REMOVAL AND ARE TO BE THOROUGHLY WATERED-IN. PAY IS SUBSIDIARY TO THE PROJECT.

10. PAVED SURFACES, PAVEMENT MARKERS AND MARKINGS SHALL BE PROTECTED FROM DAMAGE BY TRACKED EQUIPMENT.

11. IRON RODS DISTURBED DURING CONSTRUCTION ARE TO BE REPLACED BY A REGISTERED PROFESSIONAL LAND SURVEYOR FOR THE ORIGINAL PROPERTY OWNER. COST IS SUBSIDIARY TO THE PROJECT.

12. CONSTRUCTION STAKING WILL BE PROVIDED BY THE CONTRACTOR. TWO COPIES OF STAKING NOTES TO BE PROVIDED TO THE ENGINEER PRIOR TO CONSTRUCTION.

13. THE CONTRACTOR SHALL MANTAIN UPDATED RED-LINED RECORD DRAWINGS ON SITE FOR INSPECTION BY THE ENGINEER. RECORD DRAWING SHALL BE SUBMITTED AT COMPLETION OF THE PROJECT.

14. MOWING, MAINTENANCE, AND CLEAN-UP IS REQUIRED FOR THE PROJECT LIMITS AND DURATION, REGARDLESS OF THE CONTRACTOR'S SCOPE OF ACTIVITIES WITHIN THE PROJECT LIMITS.

15. THE REMOVAL OF ANY ABANDONED UTILITIES REQUIRED TO COMPLETE THE WORK SHALL BE INCIDENTAL AND COST SHALL BE SUBSIDIARY TO THE PROJECT.

16. IT IS THE CONTRACTOR'S RESPONSIBILITY TO STOCKPILE NECESSARY MATERIAL ON-SITE OR AT A SECURED OFF-SITE LOCATION AT NO ADDITIONAL EXPENSE TO WALLER COUNTY. ANY SUITABLE EXCAVATED MATERIAL ON THE PROJECT WHICH IS AVAILABLE AT THE TIME OF NEED; WHETHER FROM STORM SEWER, ROADWAY, AND/OR CHANNEL EXCAVATION, SHALL BE USED BEFORE BORROW IS BROUGHT ON-SITE. MILLINGS COLLECTED FROM PROJECT SITE ARE TO BE TRANSPORTED AND DEPOSITED ALONG HEBERT RD FROM LIVE OAK CREEK TO 3,100 FT EAST OF FM 362 AND ALONG PATTISON RD FROM MORRISON RD TO LIVE OAK CREEK.

17. POP UP DRAINS ARE NOT ALLOWED IN WALLER COUNTY RIGHT OF WAY.

18. CONTRACTOR IS RESPONSIBLE FOR CONTACTING UTILITY COMPANIES IN ORDER TO PREVENT DAMAGE TO PIPELINES FROM CONSTRUCTION EQUIPMENT.

19. BIDDERS ARE REQUESTED TO VISIT THE VICINITY OF THE PROJECT SITE AND EVALUATE THE EXISTING SITE CONDITIONS.

20. IN THOSE INSTANCES WHERE FIXED FEATURES REQUIRE, THE GOVERNING SLOPES INDICATED HEREIN MAY BE VARIED BETWEEN THE LIMITS SHOWN AND TO THE EXTENT DETERMINED BY THE ENGINEER.

21. CONTRACTOR SHALL ESTABLISH GRADE STREET INTERSECTIONS AND MEDIAN OPENINGS FOR ADEQUATE SURFACE DRAINAGE.

22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MARKING STATIONS EVERY 100 FEET AND SHALL MAINTAIN THE MARKINGS FOR THE DURATION OF THE PROJECT.

23. THE APPROXIMATE LOCATIONS OF KNOWN UNDERGROUND UTILITIES HAVE BEEN SHOWN ON THE PLAN SHEETS. PRIOR TO BEGINNING ANY EXCAVATION WORK INTHE AREA OF EXISTING UTILITIES, THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANIES OR THE UTILITY COORDINATING COMMITTEE FOR EXACT LOCATIONS TO PREVENT ANY DAMAGE OR INTERFERENCE WITH PRESENT FACILITIES. THE UTILITY COORDINATING COMMITTEE AND THE TEXAS ONE CALL SYSTEM SHALL BE NOTIFIED AT THE FOLLOWING NUMBER: OUTSIDE HMA, TOLL FREE 1-800-245-4545

   THIS ACTION, HOWEVER, SHALL IN NO WAY BE INTERPRETED AS RELIEVING THE CONTRACTOR OF THEIR RESPONSIBILITIES UNDER THE TERMS OF THE CONTRACT AS SET OUT IN THE PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY THEIR OPERATIONS AT THE CONTRACTOR'S EXPENSE AND . SHALL RESTORE FACILITIES TO SERVICE IN A TIMELY MANNER.

   IF ANY OVERHEAD OR UNDERGROUND POWER LINES NEED TO BE DE-ENERGIZED, THE CONTRACTOR SHALL CALL THE POWER COMPANY TO DO THIS WORK. ANY COST ASSOCIATED WITH DE-ENERGIZING THE POWER LINE AND/OR ANY OTHER PROTECTIVE MEASURES REQUIRED SHALL BE AT THE CONTRACTOR'S EXPENSE.

   WHEN THE CONTRACTOR IS WORKING NEAR ANY POWER LINES, IT IS THEIR RESPONSIBILITY TO COMPLY WITH THE APPROPRIATE SECTIONS OF TEXAS STATE LAW AND FEDERAL REGULATIONS RELATING TO THE TYPE OF WORK INVOLVED.

   DO NOT MIX OR STORE MATERIALS, OR STORE OR REPAIR EQUIPMENT, ON BRIDGE DECKS UNLESS AUTHORIZED BY THE COUNTY ENGINEER.

24. PERSONAL VEHICLES OF EMPLOYEES ARE NOT PERMITTED TO PARK WITHIN THE RIGHT OF WAY. EMPLOYEES MAY PARK AT THE CONTRACTOR'S OFFICE, EQUIPMENT, AND MATERIALS STORAGE YARD SITES.

25. CONTRACTOR SHALL ASSUME OWNERSHIP OF DEBRIS AND DISPOSE OF AT APPROVED LOCATION. DO NOT DISPOSE OF DEBRIS ON PRIVATE PROPERTY UNLESS APPROVED IN WRITING BY COUNTY ENGINEER.

26. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ELEVATIONS AT LOCATIONS WHERE A PROPOSED TO EXISTING TIE-IN IS LOCATED. LIMITS OF WORK MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO MATCH EXISTING ROADWAY ELEVATIONS, EXISTING CHANNEL BANKS AND OUTFALLS.

27. CONTRACTOR SHALL SEQUENCE WORK TO MIMINZE IMPACTS TO THE TRAVELLING PUBLIC AND ADJACENT PROPERTY OWNERS.

28. SCHEDULE WORK SO THAT IT LIMITS IMPACTS TO THE PUBLIC AND ADJACENT PROPERTY OWNERS.

   IF THE CONTRACTOR DAMAGES OR CAUSE DAMAGE (BREAKS, LEAKS, NICKS, DENTS, GOUGES, ETC.) TO THE UTILITY, CONTACT THE UTILITY FACILITY OWNER OR OPERATOR IMMEDIATELY.

   NOTIFY THE ENGINEER AT LEAST 48 HOURS BEFORE CONSTRUCTING JUNCTION BOXES AT STORM DRAIN AND UTILITY INTERSECTIONS.

   INSTALL OR REMOVE POLES AND LUMINAIRES LOCATED NEAR OVERHEAD OR UNDERGROUND ELECTRICAL LINES USING ESTABLISHED INDUSTRY AND UTILITY SAFETY PRACTICES. CONSULT THE APPROPRIATE UTILITY COMPANY BEFORE BEGINNING SUCH WORK.

   IF OVERHEAD OR UNDERGROUND POWER LINES NEED TO BE DE-ENERGIZED, CONTACT THE ELECTRICAL SERVICE PROVIDER TO PERFORM THIS WORK. COSTS ASSOCIATED WITH DE-ENERGIZING THE POWER LINES OR OTHER PROTECTIVE MEASURES REQUIRED ARE AT NO EXPENSE TO THE COUNTY.

   IF WORKING NEAR POWER LINES, COMPLY WITH THE APPROPRIATE SECTIONS OF TEXAS STATE LAW AND FEDERAL REGULATIONS RELATING TO THE TYPE OF WORK INVOLVED.

   PERFORM ELECTRICAL WORK IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND STANDARD SHEETS.

29. BEFORE COMMENCING CONSTRUCTION, PREPARE AND SUBMIT A SCHEDULE BASED ON THE SEQUENCE OF WORK AND TRAFFIC CONTROL PLAN SHOWN IN THE CONTRACT. INCLUDE ALL PLANNED WORK ACTIVITIES AND SEQUENCES AND SHOW COMPLETION WITHIN THE NUMBER OF CALENDAR DAYS SPECIFIED. INCORPORATE MAJOR MATERIAL PROCUREMENTS, KNOWN UTILITY RELOCATIONS, AND OTHER ACTIVITIES THAT MAY AFFECT THE COMPLETION OF THE CONTRACT IN THE SCHEDULE. INCLUDE ALL MILESTONES INCLUDING BEGINNING DATE, ENDING DATE, AND DURATION IN NUMBER OF CALENDAR DAYS FOR EACH ACTIVITY. DO NOT USE ACTIVITIES EXCEEDING 30 CALENDAR DAYS, EXCEPT FOR AGREED UPON ACTIVITIES. SHOW AN ESTIMATED PRODUCTION RATE PER CALENDAR DAY FOR EACH WORK ACTIVITY.

   SUBMIT AN UPDATED PROGRESS SCHEDULE MONTHLY, UNLESS OTHERWISE SHOWN IN THE CONTRACT OR AS DIRECTED. UPDATE THE PROGRESS SCHEDULE BY ADDING ACTUAL PROGRESS MADE DURING THE PREVIOUS UPDATE PERIOD, INCLUDING APPROVED CHANGES TO THE SEQUENCE OF WORK AND THE TRAFFIC CONTROL PLAN. IF AN UPDATED PROGRESS SCHEDULE INDICATES THE CONTRACT WILL NOT BE COMPLETED WITHIN THE NUMBER OF CALENDAR DAYS SPECIFIED, NOTIFY THE ENGINEER IN WRITING WHETHER THE CONTRACTOR WILL REVISE THE PROGRESS SCHEDULE TO MEET THE NUMBER OF CALENDAR DAYS SPECIFIED OR EXCEED THE NUMBER OF CALENDAR DAYS SPECIFIED.

   NO DIRECT COMPENSATION WILL BE MADE FOR FULFILLING THESE REQUIREMENTS, AS THIS WORK IS CONSIDERED SUBSIDIARY TO THE ITEMS OF THE CONTRACT.

   CALENDAR DAYS WILL BE CHARGED SUNDAY THROUGH SATURDAY, INCLUDING ALL HOLIDAYS, REGARDLESS OF WEATHER CONDITIONS, MATERIAL AVAILABILITY, OR OTHER CONDITIONS NOT UNDER THE CONTROL OF THE CONTRACTOR. WORK DAYS EQUAL CALENDAR DAYS.

30. ANY GROUNDWATER ELEVATION INFORMATION PROVIDED IS REPRESENTATIVE OF CONDITIONS EXISTING ON THE DAY WHEN AND FOR THE SPECIFIC LOCATION WHERE THIS INFORMATION WAS COLLECTED. THE ACTUAL GROUNDWATER ELEVATION MAY FLUCTUATE WITH TIME, CLIMATIC CONDITIONS, AND CONSTRUCTION ACTIVITY.

31. UTILITY CONTRACTORS MAY BE RELOCATING UTILITY LINES IN TEMPORARY LOCATIONS AND PERMANENT LOCATIONS IN CONJUNCTION WITH PHASED CONSTRUCTION. THE CONTRACTOR WILL PROVIDE AND COORDINATE ACCESS FOR THE VARIOUS UTILITY CONTRACTOR?S CREWS THROUGHOUT THE DURATION OF THE PROJECT.

32. MAINTAIN THE ROADWAY SLOPE STABILITY. MAINTAINING SLOPE STABILITY IS SUBSIDIARY TO THE VARIOUS BID ITEMS.

NOTE: WALLER COUNTY NOTES SUPERSEDE ANY CONFLICTING NOTES.

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
6/8/2026

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REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY
ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

GENERAL NOTES

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		2

CONSTRUCTION NOTES

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FROM WALLER COUNTY PRIOR TO COMMENCING CONSTRUCTION OF ANY IMPROVEMENTS WITHIN COUNTY ROAD RIGHT OF WAY. THE ATTENTION OF PROSPECTIVE BIDDERS IS DIRECTED TO ORDINANCES AND REGULATIONS OF LOCAL MUNICIPAL AND COUNTY GOVERNMENTS AND THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WHICH MAY BE APPLICABLE ON THIS PROJECT.

2. ALL PAVING IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH "WALLER COUNTY SUBDIVISION & DEVELOPMENT REGULATIONS" RELATING TO THE APPROVAL AND ACCEPTANCE OF IMPROVEMENTS IN SUBDIVISIONS AS CURRENTLY AMENDED.

3. ALL WEATHER ACCESS TO ALL EXISTING STREETS AND DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.

4. GUIDELINES ARE SET FORTH IN THE TEXAS "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", AS CURRENTLY AMENDED, SHALL BE OBSERVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE FLAGMEN, SIGNING, STRIPING, AND WARNING DEVICES, ETC., DURING CONSTRUCTION – BOTH DAY AND NIGHT.

5. ALL R1-1 STOP SIGNS SHALL BE A MINIMUM OF 36"X36" WITH DIAMOND GRADE SHEETING PER "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

6. SIGN POSTS AND SIGNS ARE TO BE INSTALLED PER WALLER COUNTY APPROVED SIGNAGE DESIGN DRAWINGS.

7. STREET NAME SIGNAGE SHALL BE ON A 9" HIGH SIGN FLAT BLADE W/REFLECTIVE GREEN BACKGROUND. STREET NAMES SHALL BE UPPER AND LOWERCASE LETTERING WITH UPPERCASE LETTERS OF 6" MINIMUM AND LOWERCASE LETTERS OF 4.5" MINIMUM. THE LETTERS SHALL BE REFLECTIVE WHITE. STREET NAME SIGNS SHALL BE MOUNTED ON STOP SIGN POST.

8. THE PROJECT AND ALL PARTS THEREOF SHALL BE SUBJECT TO INSPECTION FROM TIME TO TIME BY INSPECTORS DESIGNATED BY WALLER COUNTY. NO SUCH INSPECTIONS SHALL RELIEVE THE CONTRACTOR OF ANY OF ITS OBLIGATIONS HEREUNDER. NEITHER FAILURE TO INSPECT NOR FAILURE TO DISCOVER OR REJECT ANY OF THE WORK AS NOT IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS, REQUIREMENTS AND SPECIFICATIONS OF WALLER COUNTY OR ANY PROVISION OF THIS PROJECT SHALL BE CONSTRUED TO IMPLY AN ACCEPTANCE OF SUCH WORK OR TO RELIEVE THE CONTRACTOR OF ANY OF ITS OBLIGATIONS HEREUNDER.

9. STABILIZED SUBGRADE: DETERMINE THE THICKNESS OF THE STABILIZED SUBGRADE AFTER CURING AND COMPACTION. IF THE SUBGRADE DEPTH IS GREATER THAN THE PROPOSED THICKNESS BY 20% OR MORE, THE CMT LAB MUST PROVIDE VERIFICATION THE PERCENTAGE OF MATERIAL BEING USED TO STABILIZE THE SUBGRADE MEETS OR EXCEEDS PROJECT REQUIREMENTS. TEST RESULTS REQUIRED.

UTILITY NOTES

WARNING: OVERHEAD ELECTRICAL LINES

1. OVERHEAD LINES MAY EXIST ON THE PROPERTY. THE LOCATION OF OVERHEAD LINES HAS NOT BEEN SHOWN ON THESE DRAWINGS AS THE LINES ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTIONS. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES, SPECIFICALLY:
   - ANY ACTIVITY WHERE PERSON OR THINGS MAY COME WITHIN SIX(6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES; AND
   - OPERATING A CRANE, DERRICK, POWER SHOVEL, DRILLING RIG, PILE DRIVER, HOISTING EQUIPMENT, OR SIMILAR APPARATUS WITHIN 10 FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES.

2. PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL CENTERPOINT ENERGY AT (713) 207-2222.

ACTIVITIES ON/OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY

1. NO APPROVAL TO USE, CROSS, OR OCCUPY CENTERPOINT FEE OR EASEMENT PROPERTY IS GIVEN. IF YOU NEED TO USE CENTERPOINT PROPERTY, PLEASE CONTACT OUR SURVEYING & RIGHT OF WAY DIVISION AT (713) 207-6348 OR (713) 207-5769.

WARNING: UNDERGROUND ELECTRICAL UTILITIES

1. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT 1-800-545-6005 OR 811 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.
   - ALL INFORMATION CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTORS ARE RESPONSIBLE MAKING THEIR OWN DETERMINATIONS AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL VERIFY LOCATION OF UNDERGROUND UTILITIES OR BY EXCAVATING IN ADVANCE OF CONSTRUCTION.
   - THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES WHEN AND WHERE THEY FALL IN THE PATH OF CONSTRUCTION.
   - THE CONTRACTOR IS ALSO RESPONSIBLE FOR CONTACTING THE UTILITY COORDINATING COMMITTEE AT (713) 223-4567 AND TEXAS ONE CALL AT 1-800-245-4545, FORTY-EIGHT (48) HOURS PRIOR TO ANY CONSTRUCTION.
   - THE LOCATION OF ANY CENTERPOINT ENERGY UTILITIES ARE SHOWN IN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. THEY AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONES BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
   - ALL PROPOSED FACILITIES SHALL MANTAIN 12" CLEAR FROM ALL EXISTING UTILITIES.

AT&T TEXAS/SWBT FACILITIES

1. THE LOCATIONS OF AT&T TEXAS/SWTB FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.

2. THE CONTRACTOR SHALL CALL 1-800-344-8377 (TEXAS 811) A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.

3. WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T TEXAS/SWBT FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE AT&T TEXAS/SWBT FACILITIES.

4. WHEN AT&T TEXAS/SWBT FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES, THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.

5. THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWTB UNDERGROUND CONDUIT FACILITIES OR BURIED FACILITIES SHOWN ON THESE PLANS DOES NOT MEAN THAT THERE ARE NO DIRECT BURIED CABLES OR OTHER CABLES IN CONDUIT IN THE AREA.

6. PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER KEVIN RAY AT (713) 614-1983 OR E-MAIL HIM AT KR7896@ATT.COM IF CABLE LOCATE REQUESTS ARE NOT COMPLETED FOR OUR AT&T TEXAS/SWBT FACILITIES.

TRAFFIC CONTROL PLAN NOTES

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF THE MOST RECENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THE APPROVED TRAFFIC CONTROL PLAN.

2. UNIFORMED PEACE OFFICERS OR FLAGGERS IN RADIO CONTACT ARE REQUIRED TO DIRECT TRAFFIC DURING LANE CLOSURES AS INDICATED ON THE PLANS.

3. ONE DAY PRIOR TO THE IMPLEMENTATION OF A TRAFFIC CONTROL PLAN PHASE OR STEP, OR THE IMPLEMENTATION OF AN ADDITIONAL, REVISED, OR NEW TRAFFIC CONTROL ELEMENT, THE CONTRACTOR SHALL MEET WITH THE ENGINEER TO GIVE A DETAILED DESCRIPTION OF THE CONTRACTOR'S PLAN AND PREPARATIONS. THE CONTRACTOR SHALL OBTAIN WRITTEN CONCURRENCE FROM THE ENGINEER THAT ADEQUATE PROJECT PROGRESS HAS BEEN ACHIEVED AND THAT ADEQUATE PREPARATIONS ARE IN PLACE PRIOR TO SWITCHING TRAFFIC. IF, IN THE OPINION OF THE ENGINEER, REQUIRED PROGRESS AND ADEQUATE PREPARATIONS ARE NOT COMPLETE, THE CONTRACTOR SHALL NOT IMPLEMENT THE NEXT PHASE, STEP, OR ELEMENT OF TRAFFIC CONTROL UNTIL INCOMPLETE CONSTRUCTION ITEMS OR PREPARATIONS ARE COMPLETED. TIME EXTENSIONS WILL NOT BE GRANTED FOR DELAYS CAUSED BY THE INCOMPLETE CONSTRUCTION ITEMS OR INADEQUATE CONTRACTOR PREPARATIONS REQUIRED TO IMPLEMENT TRAFFIC CONTROL.

4. TRAFFIC CONTROL PER THE CONTRACT IS REQUIRED FOR THE ENTIRE DURATION OF THE PROJECT, INCLUDING THE PUNCHLIST PERIOD. PAYMENT FOR TRAFFIC CONTROL THAT IS PROPERLY INSTALLED FOR LESS THAN A FULL MONTH SHALL BE BASED ON A PERCENTAGE BASIS OF THE TIME INSTALLED. TRAFFIC CONTROL PAYMENTS TO THE CONTRACTOR SHALL END 10 DAYS AFTER SUBSTANTIAL COMPLETION, ALTHOUGH PROPER TRAFFIC CONTROL MUST BE MANTAINED UNTIL PUNCHLIST COMPLETION.

5. THE PURPOSE OF THE CONSTRUCTION SEQUENCE AND TRAFFIC HANDLING OUTLINED HEREIN IS TO DOCUMENT A VIABLE TCP THAT CAN BE UTILIZED TO CONSTRUCT THE PROJECT. IT IS THE BASIS OF ESTIMATION FOR THE TRAFFIC CONTROL BID ITEMS, AND IS TO BE UTILIZED AND IMPLEMENTED, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
   IF THE CONTRACTOR CHOOSES TO USE A DIFFERENT TCP, THE ALTERNATIVE TCP SHALL BE SUBMITTED TO THE COUNTY FOR APPROVAL NO LESS THAN 10 WORKING DAYS PRIOR TO THE PROPOSED IMPLEMENTATION DATE. THE TCP SHALL BE DRAWN TO SCALE AND SIGNED & SEALED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS. UPON APPROVAL BY WALLER COUNTY, THE ALTERNATIVE PLAN SHALL BECOME THE BASIS FOR A "CHANGE IN CONTRACT" TO REVISE THE TRAFFIC CONTROL BID ITEMS ACCORDINGLY AND BECOME PART OF THE CONTRACT DOCUMENTS.

6. ALL TEMPORARY PAVEMENT MARKINGS ON PERMANENT PAVEMENT SHOULD BE TABS.

7. TRAFFIC PATTERN CHANGES REQUIRE CHANGEABLE MESSAGE BOARDS PLACED AT LEAST 2 WEEKS IN ADVANCE OF PROPOSED CHANGE. QUANTITY, PLACEMENT, AND WORDING TBD BY WALLER COUNTY.

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
5/29/2026

NOTE: WALLER COUNTY NOTES SUPERSEDE ANY CONFLICTING NOTES.

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY
ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

GENERAL NOTES

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		3

DATE: 5/29/2026 10:43:17 AM
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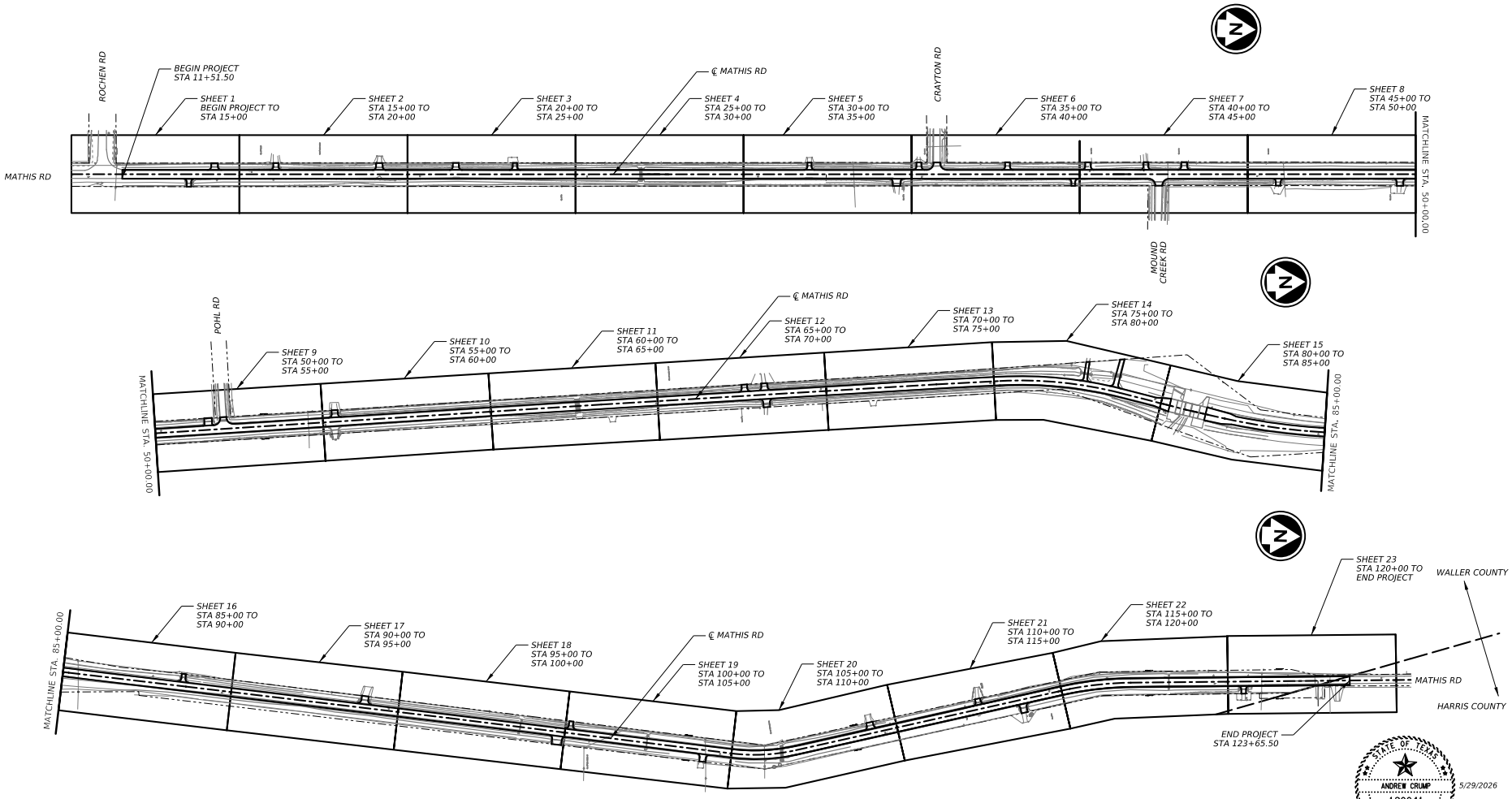

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
5/29/2026

0 100 200 300
SCALE IN FEET
1"=300' HORIZONTAL

DATE: 5/29/2026 10:43:20 AM
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REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS
WALLER COUNTY

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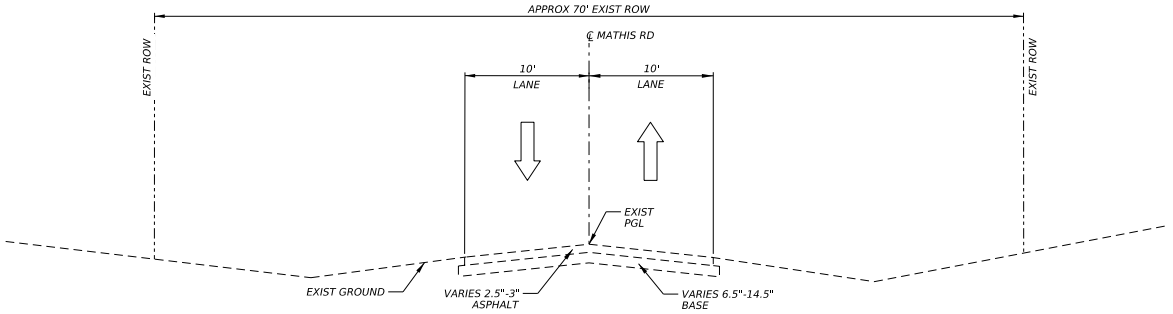
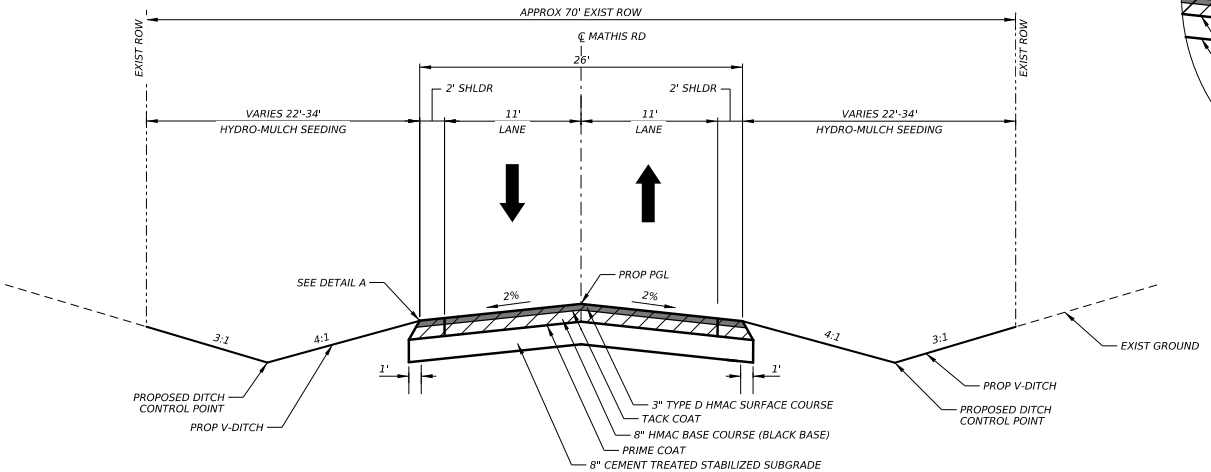
PROJECT LAYOUT

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		4



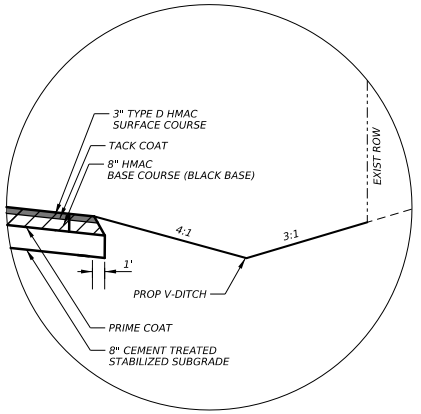
MATHIS RD - EXISTING TYPICAL SECTION

STA 11+51.50 TO STA 123+65.50
N.T.S.



MATHIS RD - PROPOSED TYPICAL SECTION

STA 11+51.50 TO STA 123+65.50
N.T.S.



DETAIL A

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
5/29/2026

0 2 4 6 8 10
SCALE IN FEET
1" = 10' HORIZONTAL
1" = 1' VERTICAL

DATE: 5/29/2026 10:43:20 AM
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Firm No. F-11278

TYPICAL SECTIONS

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		5

MATHIS ROAD

HORIZONTAL ALIGNMENT REPORT

Alignment name: BL_MATHIS
Alignment description:
Report Created: Tuesday, March 17, 2026
Time: 3:20:06 PM

	STATION	X	Y
POT	10+00.00 R1	2947423.0959	13919949.8572
PI	19+53.09 R1	2947383.8884	13920902.1426
Tangential Direction:	N02°21'27.55"W		
Tangential Length:	953.09		
PI	19+53.09 R1	2947383.8884	13920902.1426
PI	63+29.36 R1	2947202.6029	13925274.6514
Tangential Direction:	N02°22'26.91"W		
Tangential Length:	4376.27		
PI	63+29.36 R1	2947202.6029	13925274.6514
PI	73+28.78 R1	2947165.2096	13926273.3757
Tangential Direction:	N02°08'39.17"W		
Tangential Length:	999.42		
PI	73+28.78 R1	2947165.2096	13926273.3757
PC	75+18.13 R1	2947159.6686	13926462.6420
Tangential Direction:	N01°40'36.83"W		
Tangential Length:	189.35		
PC	75+18.13 R1	2947159.6686	13926462.6420
PI	76+99.80 R1	2947154.3524	13926644.2325
CC		2948354.9684	13926497.6353
PT	78+78.71 R1	2947203.2060	13926819.2088
Radius:	1195.81		
Delta:	17°16'36" Right		
Degree of Curvature(Arc):	04°47'29"		
Length:	360.58		
Tangent:	181.67		
Chord:	359.21		
Middle Ordinate:	13.57		
External:	13.72		
Tangent Back Direction:	N01°40'36.83"W		
Radial Direction:	N88°19'23.17"E		
Chord Direction:	N06°57'41.23"E		
Radial Direction:	S74°24'00.72"E		
Tangent Ahead Direction:	N15°35'59.28"E		
PT	78+78.71 R1	2947203.2060	13926819.2088
PI	80+80.50 R1	2947257.4715	13927013.5686
Tangential Direction:	N15°35'59.28"E		
Tangential Length:	201.79		
PI	80+80.50 R1	2947257.4715	13927013.5686
PI	81+98.25 R1	2947286.4069	13927127.7038
Tangential Direction:	N14°13'32.89"E		
Tangential Length:	117.75		
PI	81+98.25 R1	2947286.4069	13927127.7038
PC	81+99.84 R1	2947286.7869	13927129.2485
Tangential Direction:	N13°49'17.84"E		
Tangential Length:	1.59		

MATHIS ROAD CONT...

	STATION	X	Y
PC	81+99.84 R1	2947286.7869	13927129.2485
PI	83+28.37 R1	2947317.4940	13927254.0618
CC		2945531.3085	13927561.1379
PT	84+56.48 R1	2947330.2331	13927381.9641
Radius:	1807.83		
Delta:	08°08'01" Left		
Degree of Curvature(Arc):	03°10'10"		
Length:	256.64		
Tangent:	128.54		
Chord:	256.42		
Middle Ordinate:	4.55		
External:	4.56		
Tangent Back Direction:	N13°49'17.84"E		
Radial Direction:	S76°10'42.16"E		
Chord Direction:	N09°45'17.20"E		
Radial Direction:	S84°18'43.45"E		
Tangent Ahead Direction:	N05°41'16.55"E		
PT	84+56.48 R1	2947330.2331	13927381.9641
PI	84+86.63 R1	2947333.2220	13927411.9731
Tangential Direction:	N05°41'16.55"E		
Tangential Length:	30.16		
PI	84+86.63 R1	2947333.2220	13927411.9731
PI	85+16.85 R1	2947335.7934	13927442.0781
Tangential Direction:	N04°52'55.54"E		
Tangential Length:	30.21		
PI	85+16.85 R1	2947335.7934	13927442.0781
PI	88+67.49 R1	2947365.6351	13927791.4483
Tangential Direction:	N04°52'55.54"E		
Tangential Length:	350.64		
PI	88+67.49 R1	2947365.6351	13927791.4483
PI	96+53.90 R1	2947434.1103	13928574.8714
Tangential Direction:	N04°59'42.92"E		
Tangential Length:	786.41		
PI	96+53.90 R1	2947434.1103	13928574.8714
PC	105+02.66 R1	2947512.1125	13929420.0395
Tangential Direction:	N05°16'22.79"E		
Tangential Length:	848.76		
PC	105+02.66 R1	2947512.1125	13929420.0395
PI	106+00.35 R1	2947521.0900	13929517.3129
CC		2946953.6613	13929471.5800
PT	106+96.09 R1	2947496.6498	13929611.8928
Radius:	560.82		
Delta:	19°45'42" Left		
Degree of Curvature(Arc):	10°12'59"		
Length:	193.43		
Tangent:	97.69		
Chord:	192.48		
Middle Ordinate:	8.32		
External:	8.44		
Tangent Back Direction:	N05°16'22.79"E		
Radial Direction:	S84°43'37.21"E		
Chord Direction:	N04°36'28.39"W		
Radial Direction:	N75°30'40.43"E		
Tangent Ahead Direction:	N14°29'19.57"W		

MATHIS ROAD CONT...

	STATION	X	Y
PT	106+96.09 R1	2947496.6498	13929611.8928
PI	114+96.03 R1	2947296.5138	13930386.3873
Tangential Direction:	N14°29'19.57"W		
Tangential Length:	799.94		
PI	114+96.03 R1	2947296.5138	13930386.3873
PC	115+06.45 R1	2947293.9062	13930396.4784
Tangential Direction:	N14°29'19.57"W		
Tangential Length:	10.42		
PC	115+06.45 R1	2947293.9062	13930396.4784
PI	116+10.47 R1	2947267.8823	13930497.1870
CC		2948245.7248	13930642.4364
PT	117+13.71 R1	2947263.5098	13930601.1117
Radius:	983.08		
Delta:	12°04'47" Right		
Degree of Curvature(Arc):	05°49'41"		
Length:	207.26		
Tangent:	104.02		
Chord:	206.88		
Middle Ordinate:	5.46		
External:	5.49		
Tangent Back Direction:	N14°29'19.57"W		
Radial Direction:	N75°30'40.43"E		
Chord Direction:	N08°26'56.31"W		
Radial Direction:	N87°35'26.94"E		
Tangent Ahead Direction:	N02°24'33.06"W		
PT	117+13.71 R1	2947263.5098	13930601.1117
PI	140+59.77 R1	2947164.8916	13932945.0920
Tangential Direction:	N02°24'33.06"W		
Tangential Length:	2346.05		
PI	140+59.77 R1	2947164.8916	13932945.0920
POT	142+11.32 R1	2947158.5498	13933096.5074
Tangential Direction:	N02°23'54.01"W		
Tangential Length:	151.55		

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
5/29/2026

DATE: 5/29/2026 10:39:58 AM
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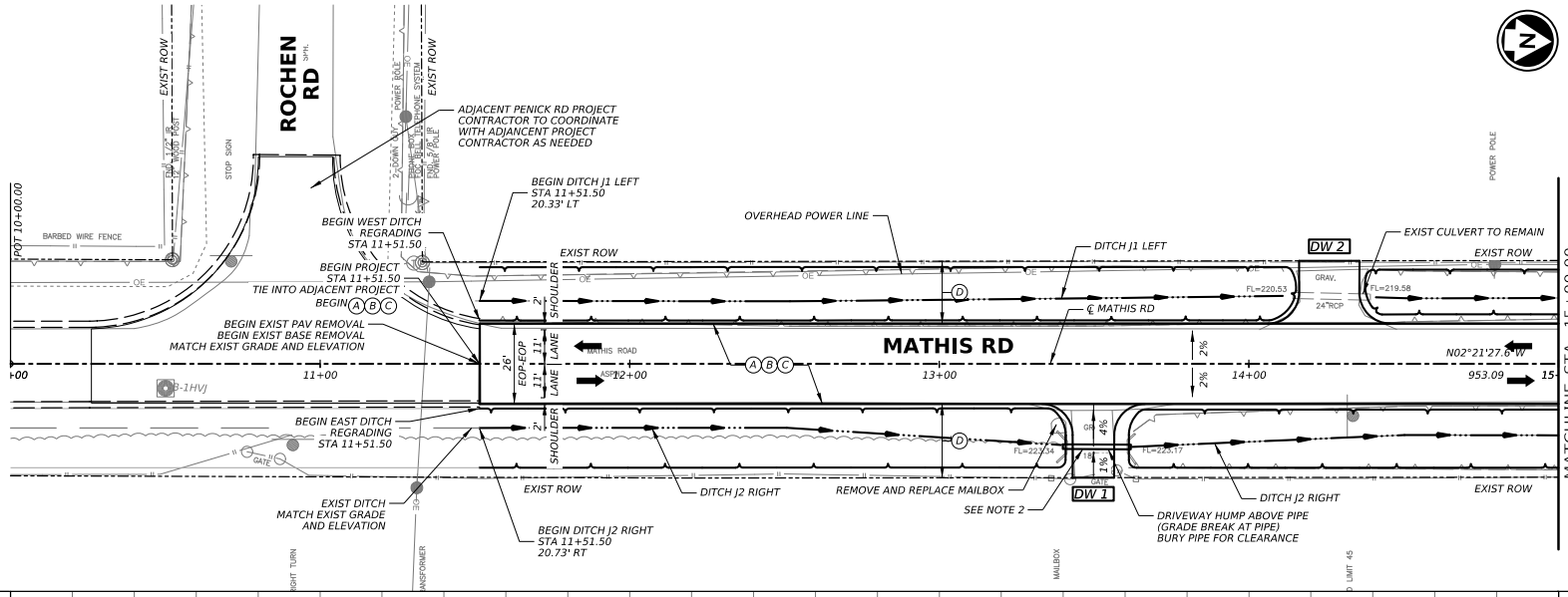
REV. NO.	DATE	DESCRIPTION	BY

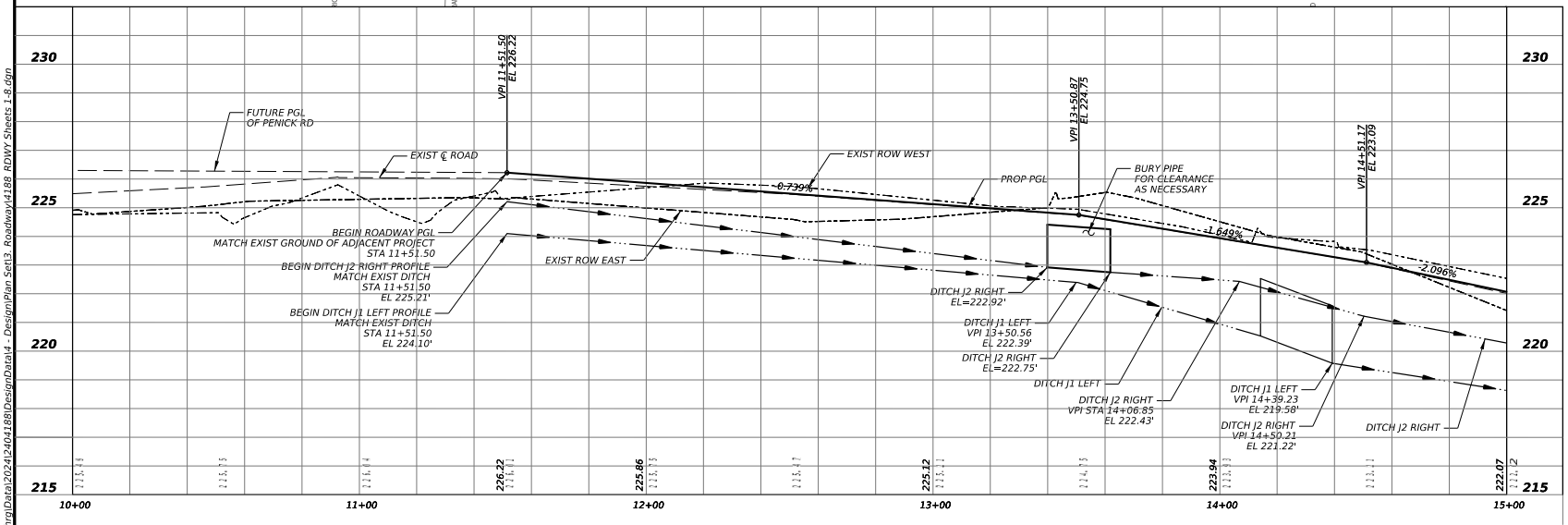
WALLER COUNTY
ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

HORIZONTAL ALIGNMENT DATA

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		6





LEGEND

BUBBLE NOTES LEGEND:

- (A) PROP 3" TYPE D HMAC SURFACE COURSE
- (B) PROP 8" CEMENT STABILIZED SUBGRADE
- (C) PROP 8" HMAC BASE COURSE (BLACK BASE)
- (D) HYDROMULCH SEEDING
- PROP DITCH FLOWLINE
- PROP DIRECTION OF TRAVEL
- PROP CULVERT
- EXIST CULVERT
- DW XX PROP DRIVEWAY #

NOTES:

1. ALL PROPOSED DRIVEWAYS SHALL HAVE A 10' RADIUS UNLESS OTHERWISE NOTED.
2. REFER TO DRIVEWAY CULVERT TABLE FOR CULVERT DATA.
3. EXISTING TRAFFIC SIGNS WITHIN PROJECT LIMITS SHALL BE REMOVED AND REPLACED AS SHOWN ON THE SIGNING AND STRIPING PLANS.
4. ALL DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
5. ALL PC,PI, AND PT STATIONS AND OFFSETS ARE TO EDGE OF PAVEMENT.
6. SEE GENERAL CONSTRUCTION NOTES FOR ADDITIONAL INFORMATION.
7. UTILITIES ARE SHOWN IN AN APPROXIMATE LOCATION ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION PRIOR TO COMMENCING WORK.
8. CONTRACTOR TO COORDINATE WITH ADJACENT PENICK ROAD PROJECT.
9. REFER TO PROPOSED DITCH HYDRAULIC CALCULATION SHEETS FOR DITCH INFORMATION.

STATE OF TEXAS — ANDREW CRUMP — 120041 — LICENSED PROFESSIONAL ENGINEER — 6/9/2026

SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 1 OF 23

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS — WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD
ROADWAY PLAN
& PROFILE
BEGIN PROJECT TO STA 15+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		7

DATE: 6/9/2026 11:28:31 AM
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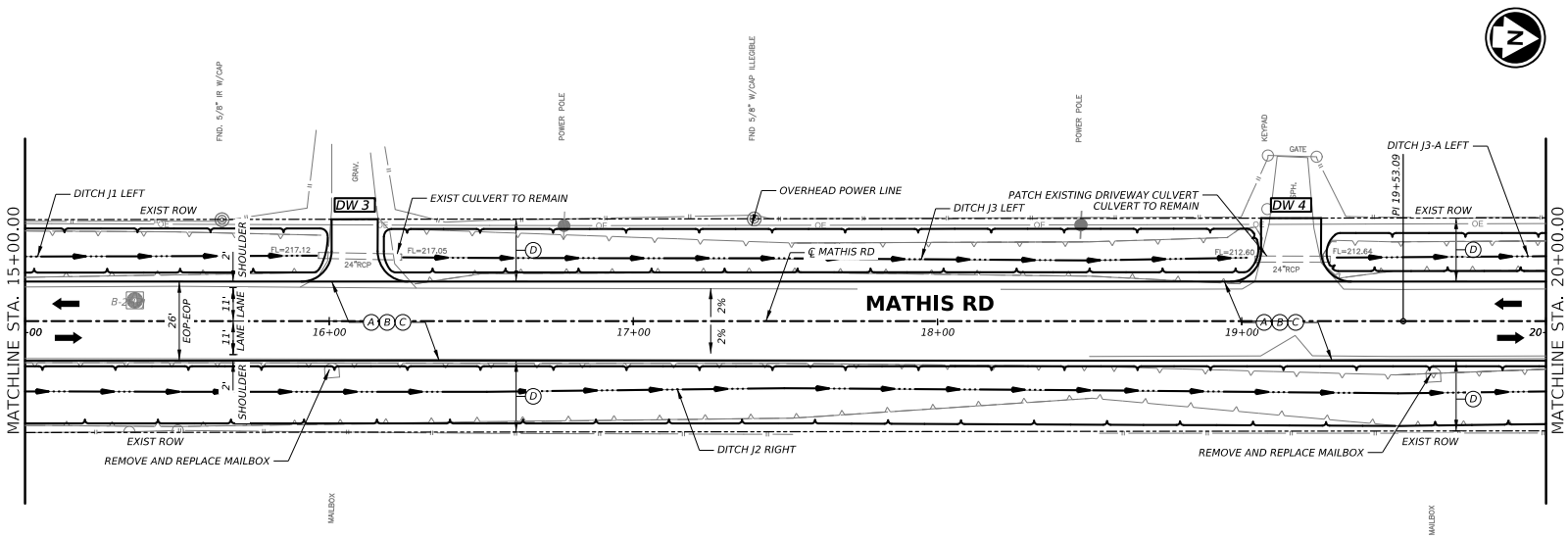

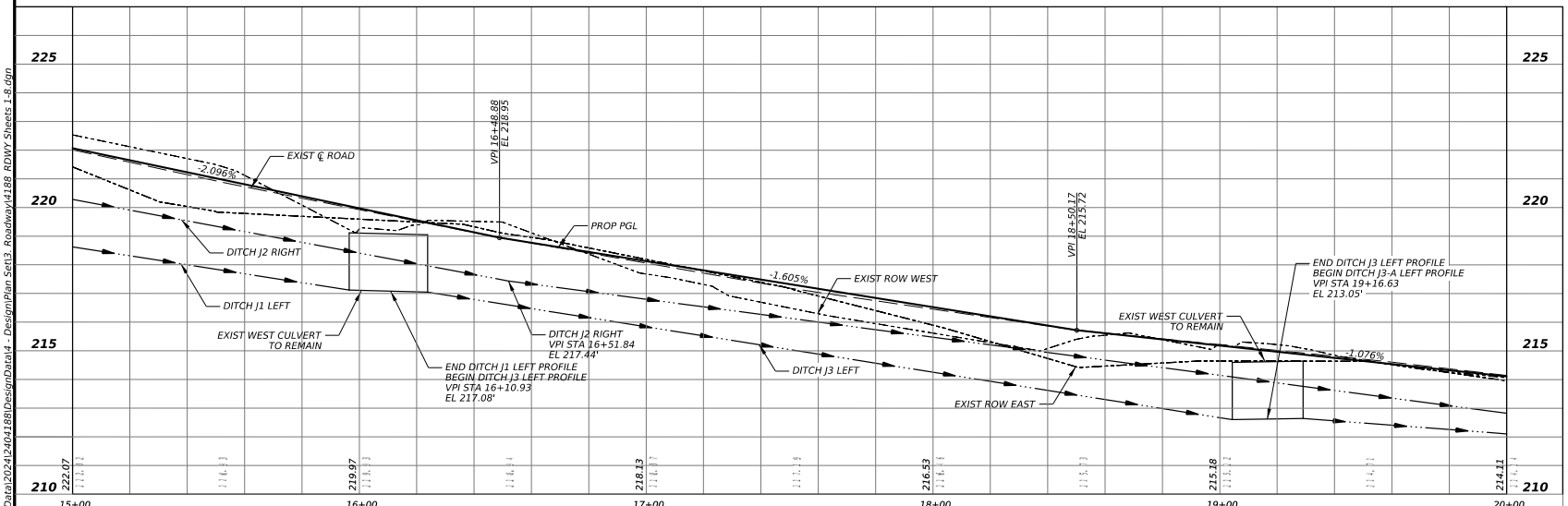

LEGEND

BUBBLE NOTES LEGEND:

- (A) PROP 3" TYPE D HMAC SURFACE COURSE
- (B) PROP 8" CEMENT STABILIZED SUBGRADE
- (C) PROP 8" HMAC BASE COURSE (BLACK BASE)
- (D) HYDROMULCH SEEDING
- PROP DITCH FLOWLINE
- PROP DIRECTION OF TRAVEL
- PROP CULVERT
- EXIST CULVERT
- DW XX PROP DRIVEWAY #

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STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 2 OF 23

DATE: 5/29/2026 10:40:05 AM
FILE: \\hrgreen.com\hrgi\Data\2024\2404188\DesignData\4 - Design\Plan Set\3. Roadway\4188 RDWY Sheets 1-8.dgn

REV. NO.	DATE	DESCRIPTION	BY

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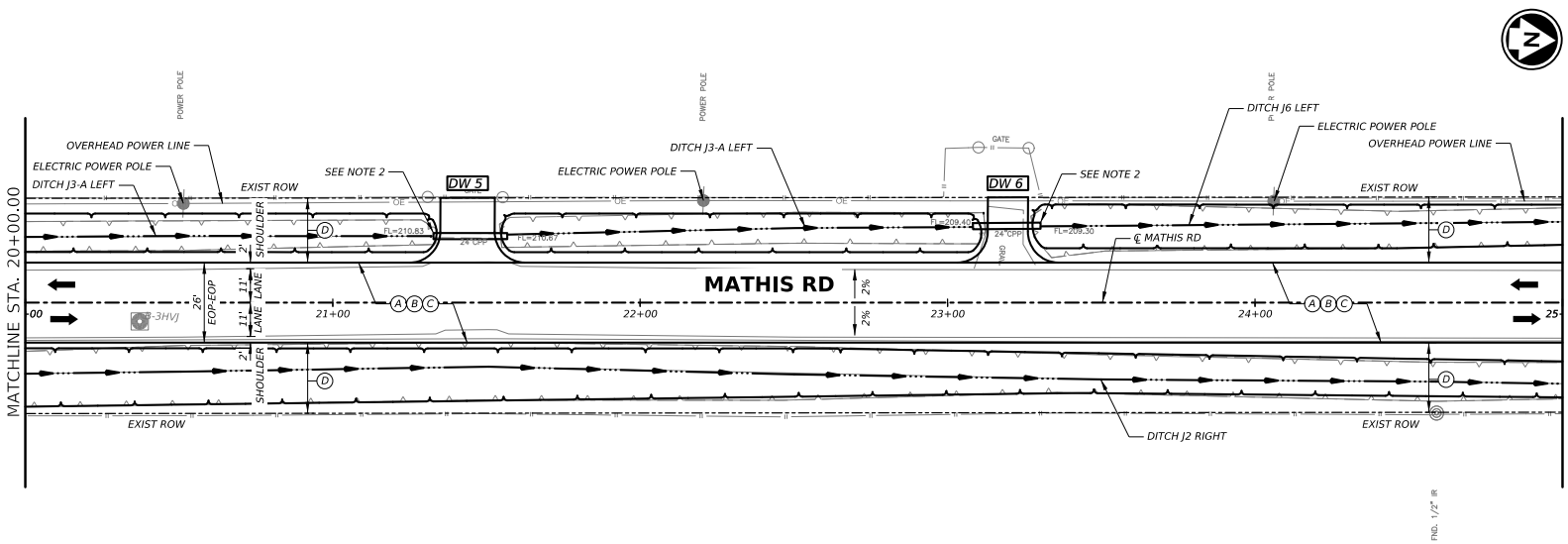
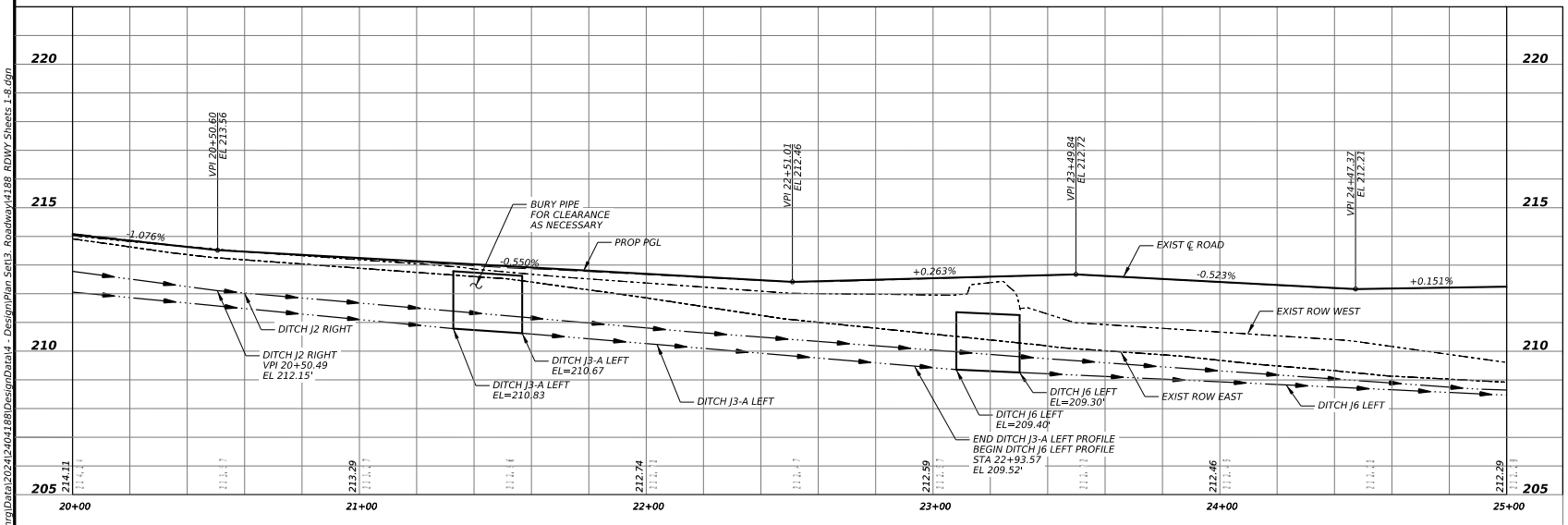
Firm No. F-11278

MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 15+00 TO STA 20+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		8





LEGEND

BUBBLE NOTES LEGEND:

- (A) PROP 3" TYPE D HMAC SURFACE COURSE
- (B) PROP 8" CEMENT STABILIZED SUBGRADE
- (C) PROP 8" HMAC BASE COURSE (BLACK BASE)
- (D) HYDROMULCH SEEDING
- PROP DITCH FLOWLINE
- PROP DIRECTION OF TRAVEL
- PROP CULVERT
- EXIST CULVERT
- DW XX PROP DRIVEWAY #

NOTES:

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STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 3 OF 23

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 20+00 TO STA 25+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		9

DATE: 6/9/2026 9:17:03 AM
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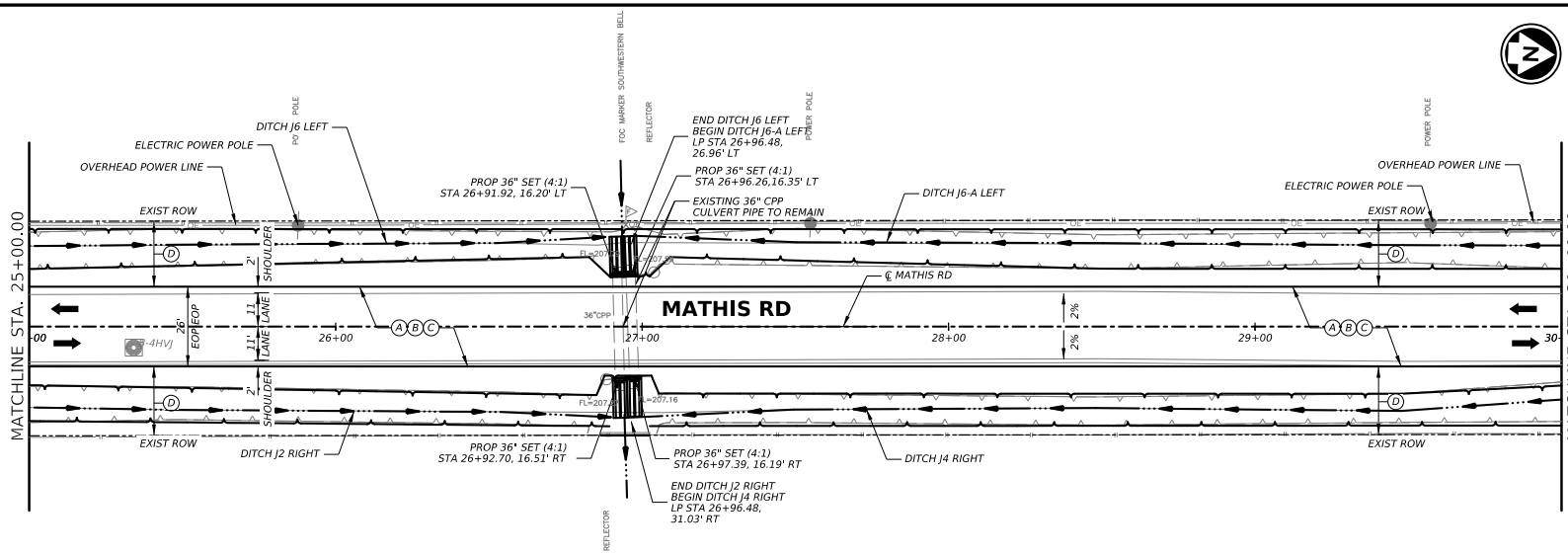

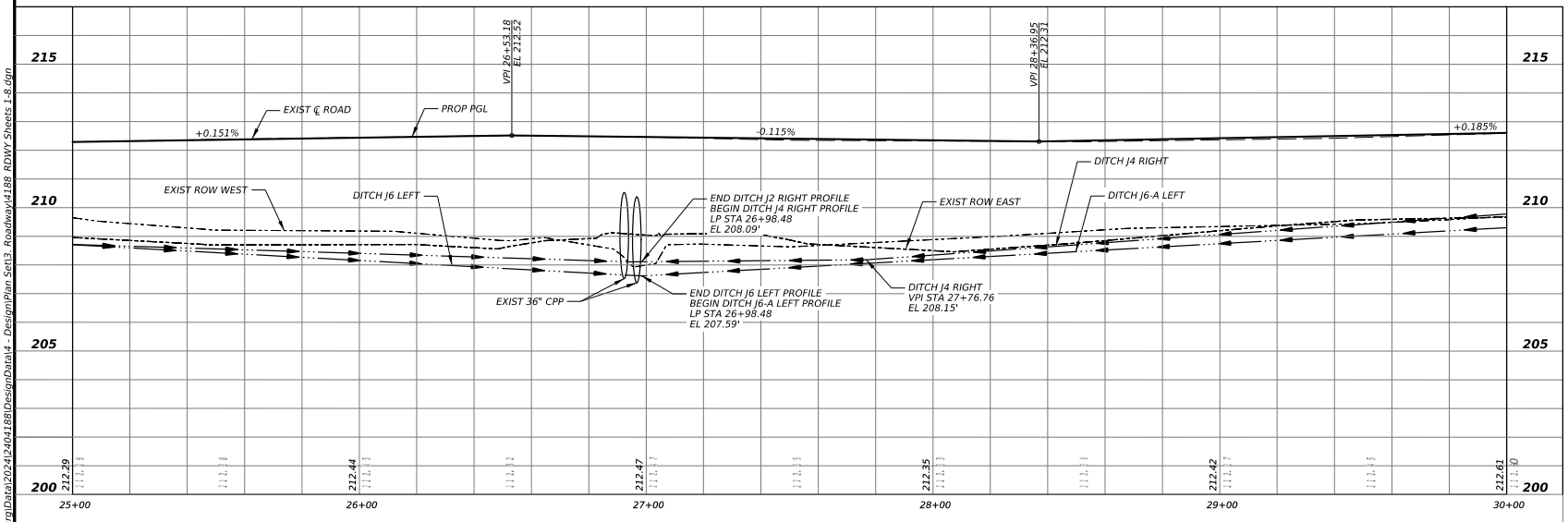

LEGEND

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- PROP CULVERT
- EXIST CULVERT
- DW XX PROP DRIVEWAY #

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STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40' HORIZONTAL
1"=4' VERTICAL

SHEET 4 OF 23

DATE: 5/29/2026 10:40:07 AM
FILE: \\hrgreen.com\hrgi\Data\2024\2404188\DesignData\4 - DesignPlan Set\3- Roadway\4188 RDWY Sheets 1-8.dgn

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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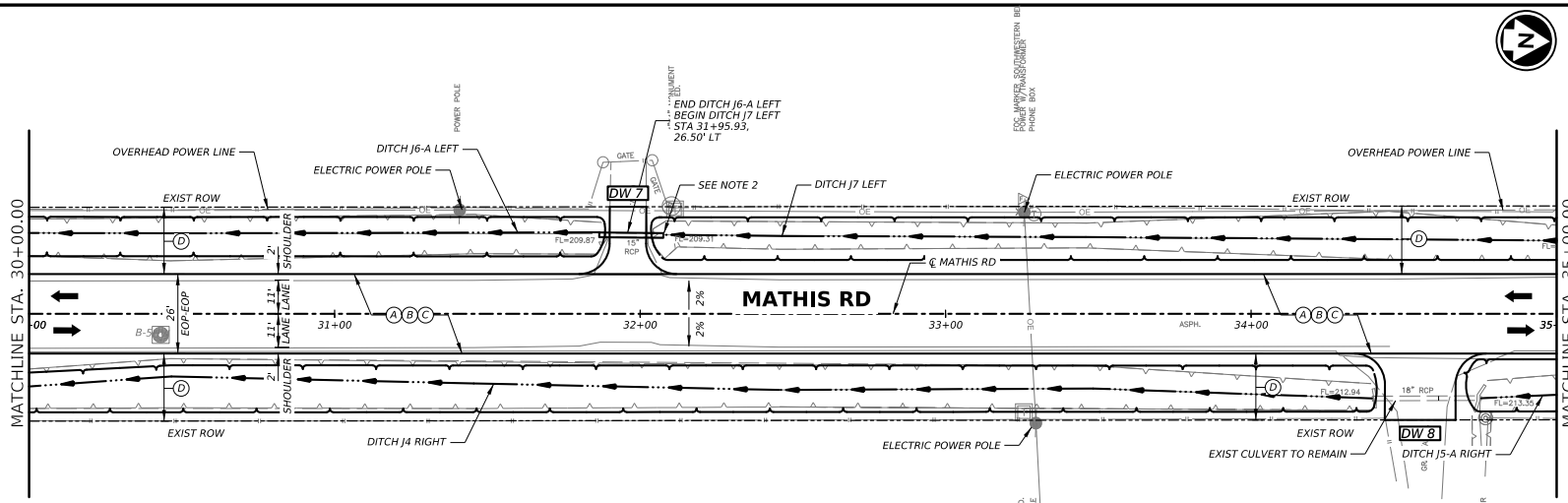
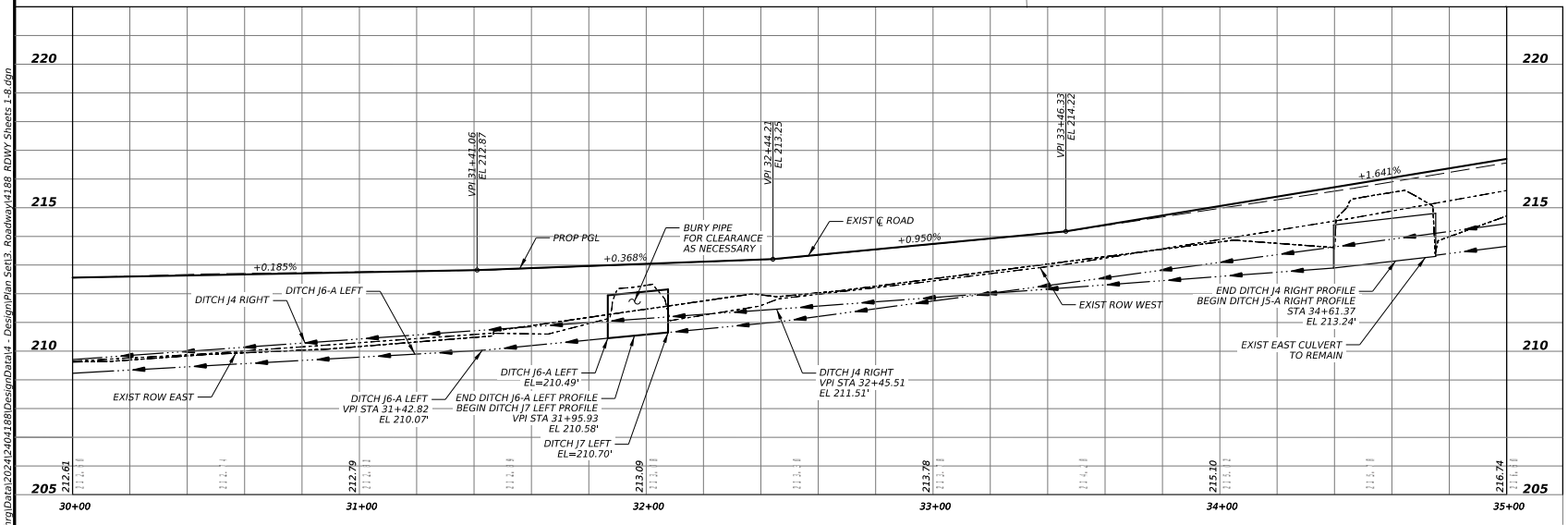
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 25+00 TO STA 30+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		10





LEGEND

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- PROP CULVERT
- EXIST CULVERT
- DW XX PROP DRIVEWAY #

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STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 5 OF 23

REV. NO.	DATE	DESCRIPTION	BY

DATE: 6/9/2026 9:17:05 AM
FILE: \\hrgreen.com\hrg\Data\2024\2404188\Design\Data\4 - Design\Plan Set\3. Roadway\4188 RDWY Sheets 1-8.dgn

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
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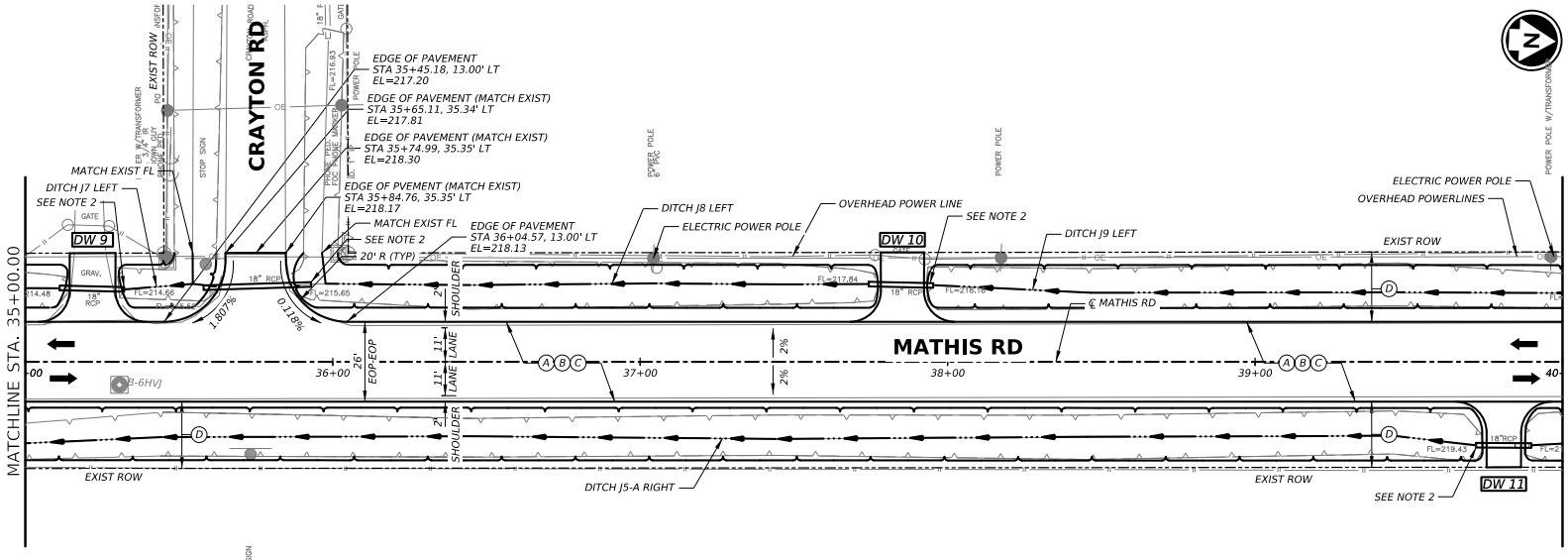
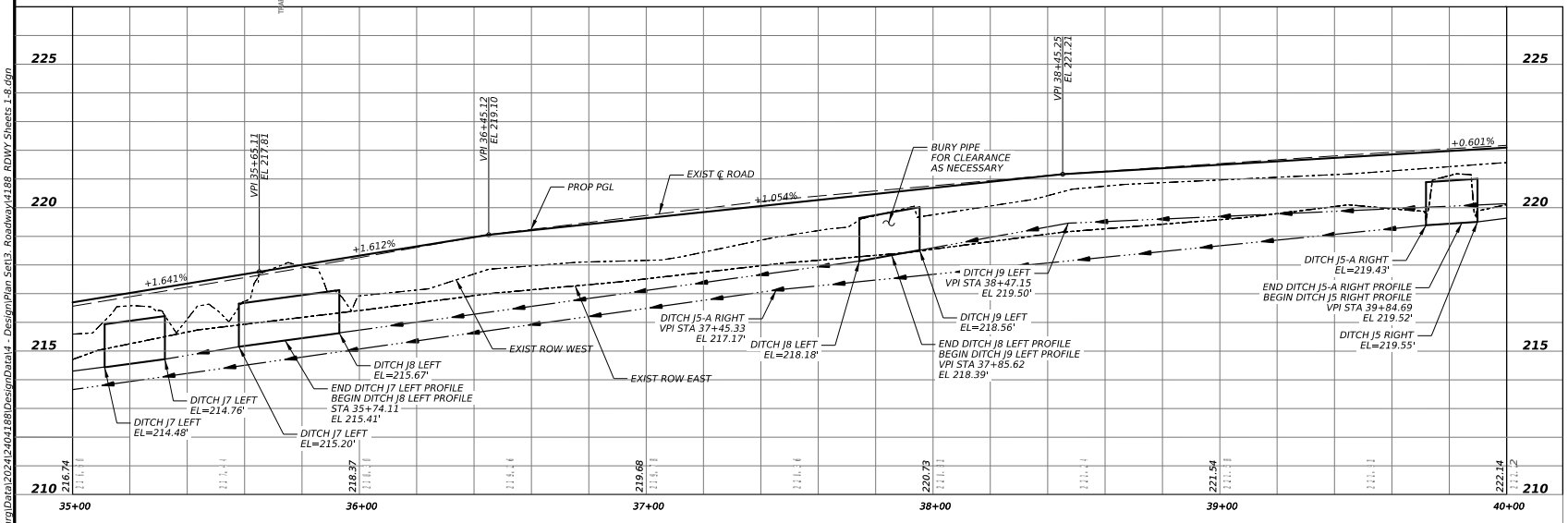
HRGreen.com
Firm No. F-11278

MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 30+00 TO STA 35+00

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		11





LEGEND

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- PROP CULVERT
- EXIST CULVERT
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STATE OF TEXAS — ANDREW CRUMP — 120041 — LICENSED PROFESSIONAL ENGINEER — 6/9/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 6 OF 23

DATE: 6/9/2026 9:17:05 AM
FILE: \\hrgreen.com\hrg\Data\2024\2404188\Design\Data\4 - Design\Plan Set\3. Roadway\4188 RDWY Sheets 1-8.dgn

REV. NO.	DATE	DESCRIPTION	BY

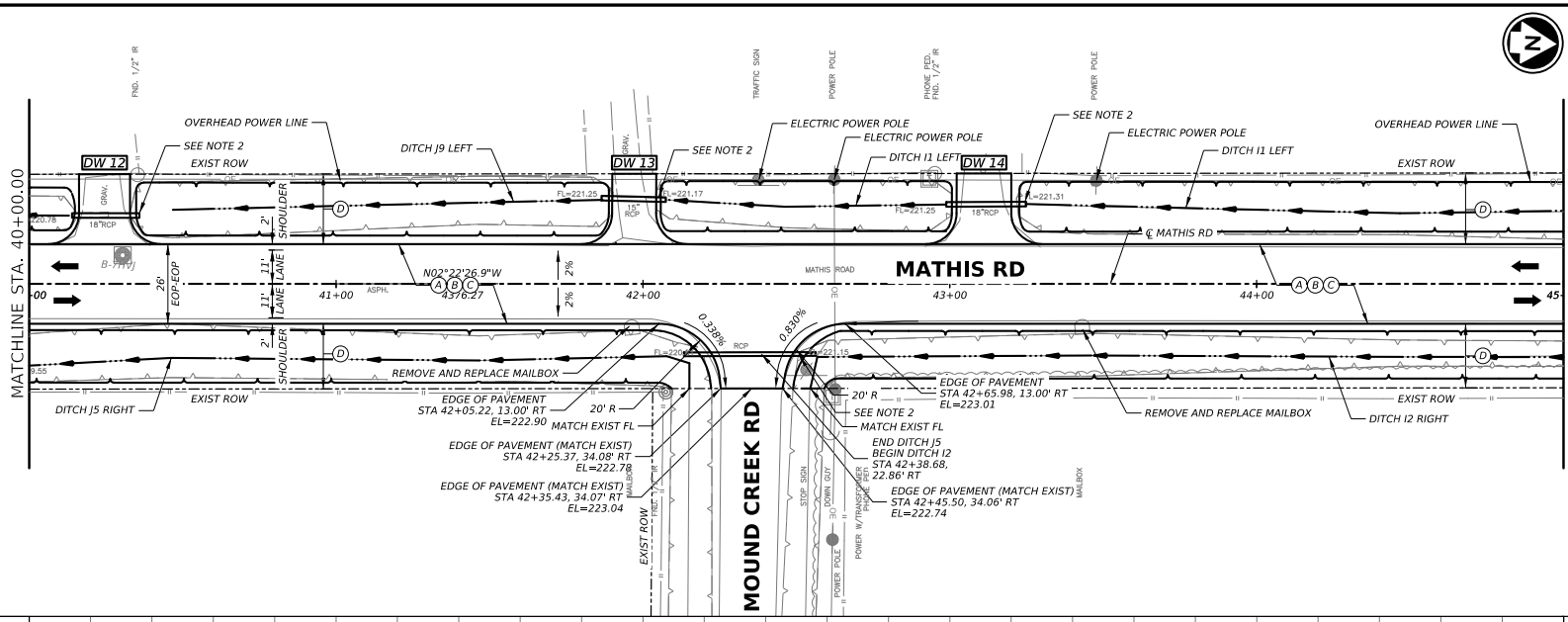
WALLER COUNTY ENGINEERING DEPARTMENT

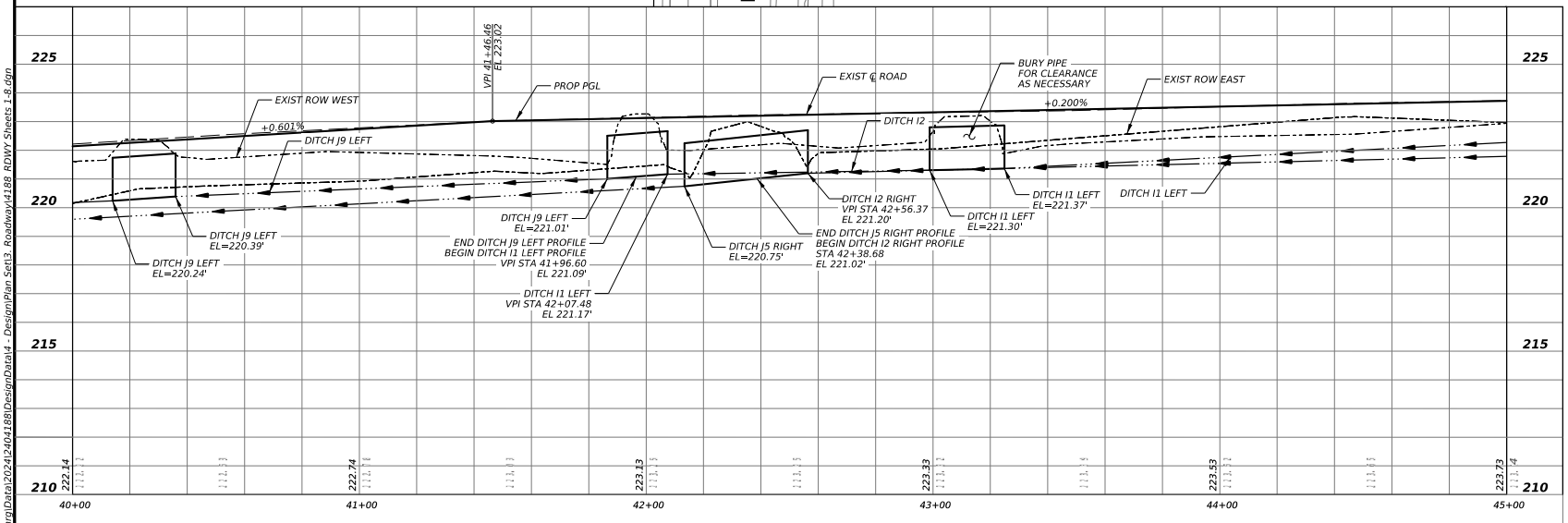
THE STATE OF TEXAS — WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 35+00 TO STA 40+00

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		12





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STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 7 OF 23

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS — WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
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HRGreen.com
Firm No. F-11278

MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 40+00 TO STA 45+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		13

DATE: 6/9/2026 9:17:06 AM
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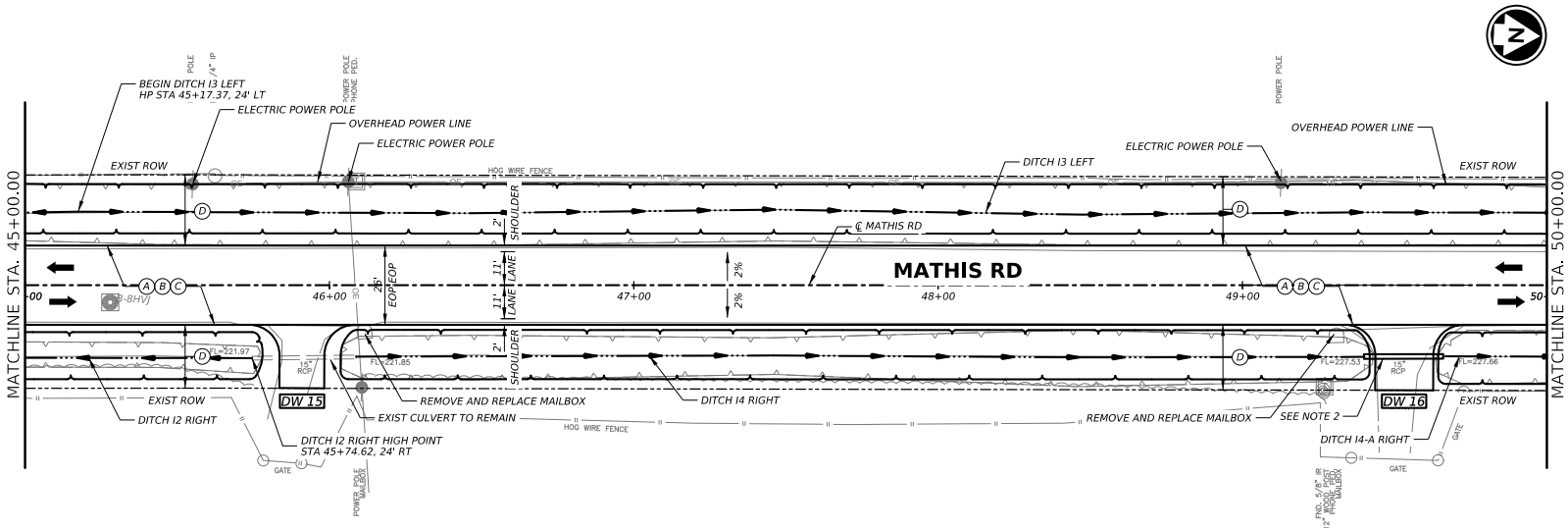

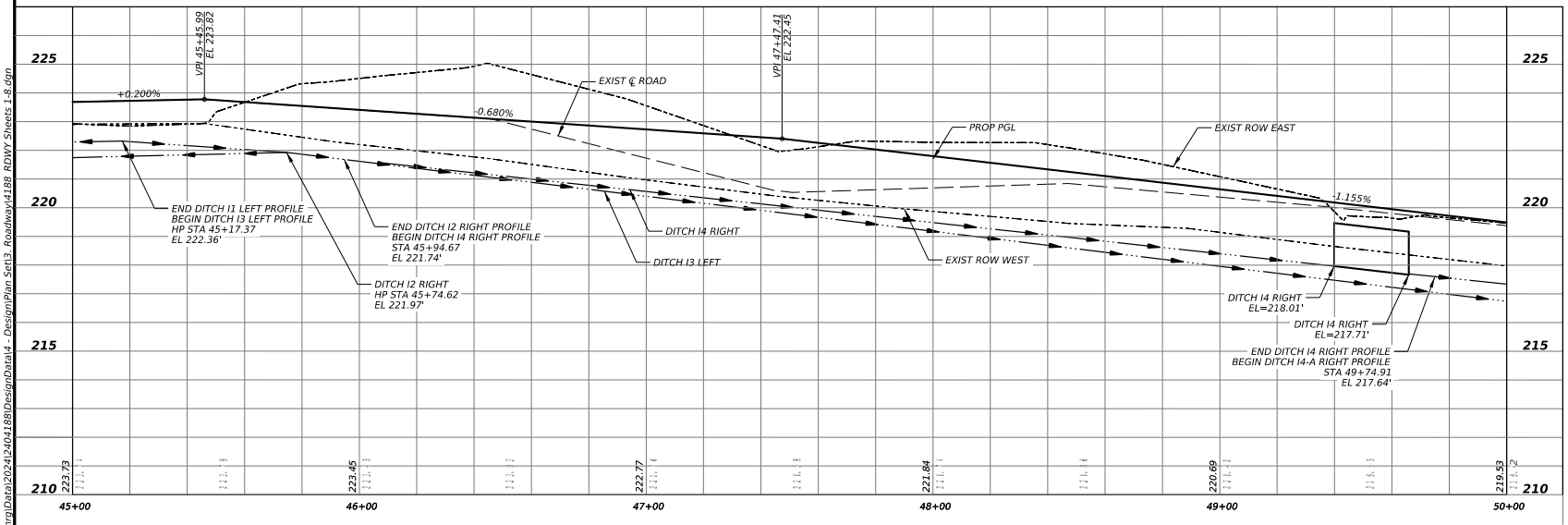

LEGEND

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STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 8 OF 23

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS
WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
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MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 45+00 TO STA 50+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		14

DATE: 5/29/2026 10:40:11 AM
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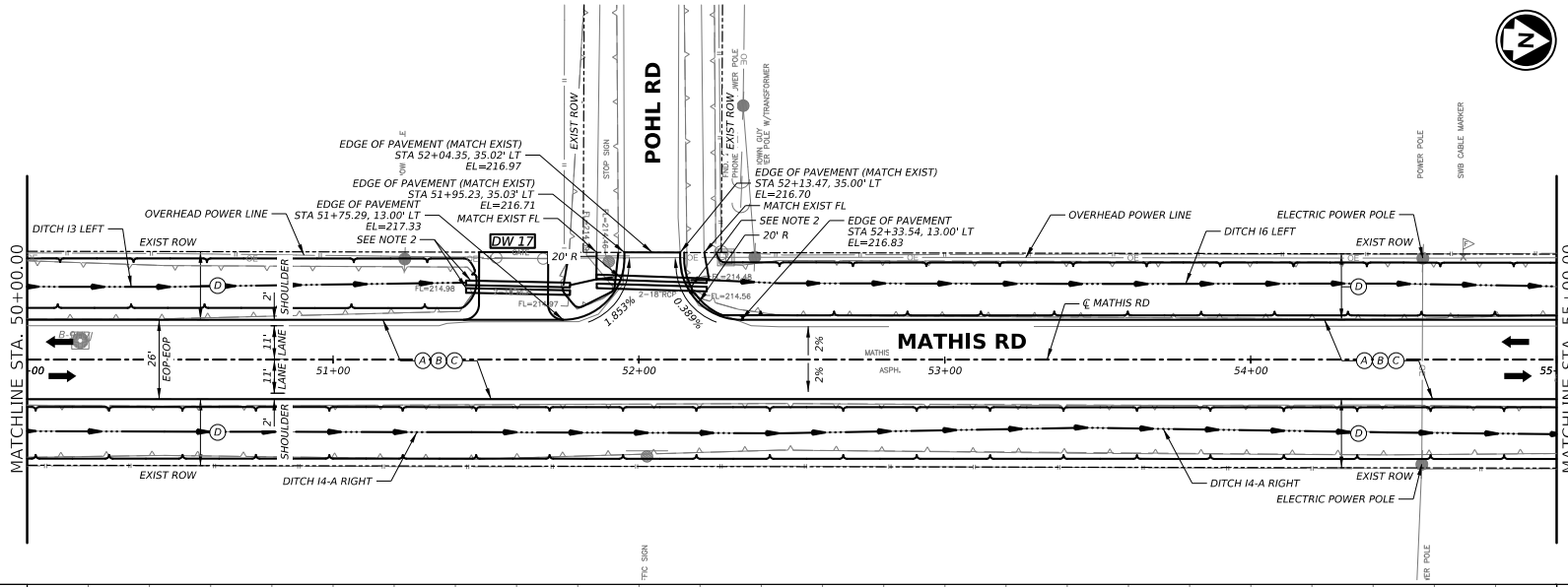

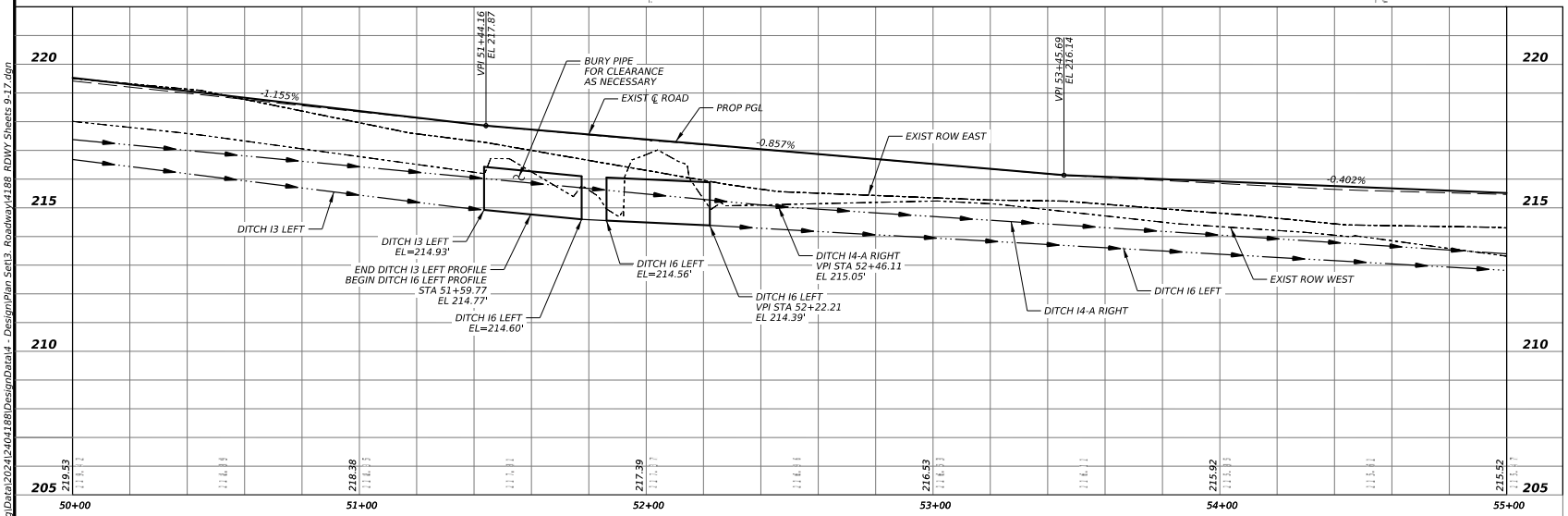

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STATE OF TEXAS — ANDREW CRUMP — 120041 — LICENSED PROFESSIONAL ENGINEER — 6/9/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 9 OF 23

DATE: 6/9/2026 11:21:08 AM
FILE: \\hrgreen.com\hrg\Data\2024\2404188\DesignData\4 - DesignPlan Set\3- Roadway\4188 RDWY Sheets 9-17.dgn

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY
ENGINEERING DEPARTMENT

THE STATE OF TEXAS — WALLER COUNTY

PREPARED BY:
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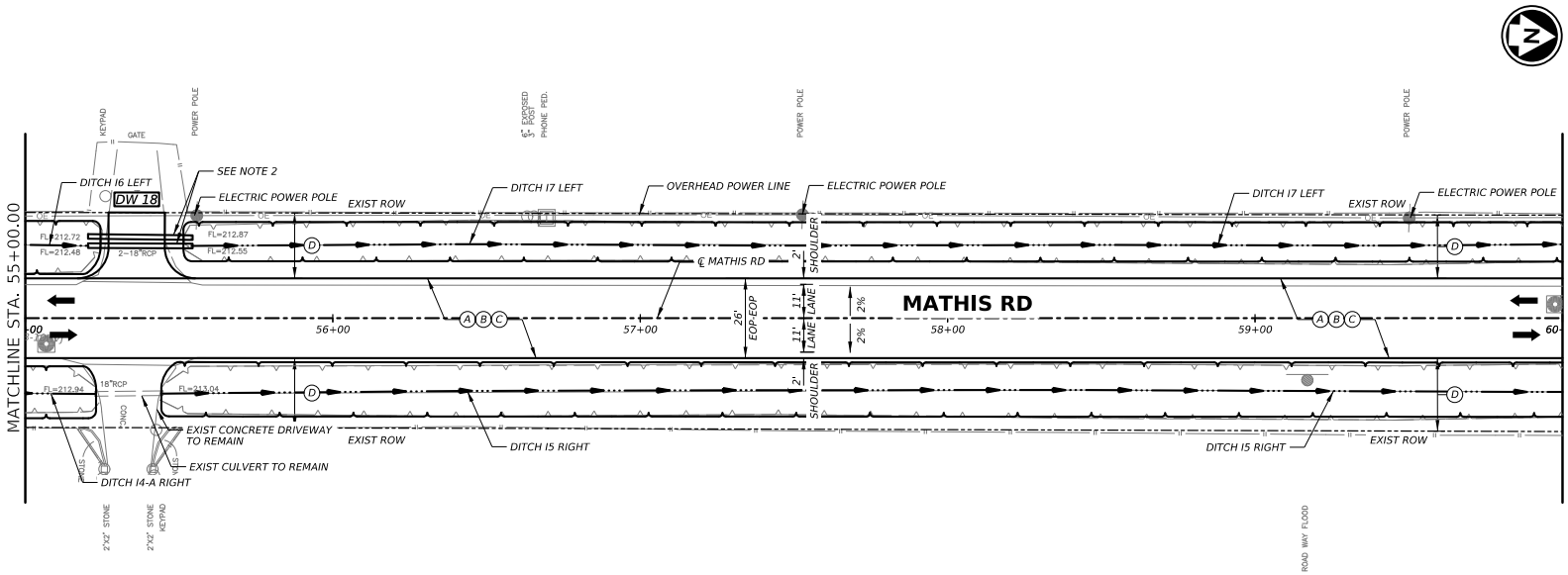
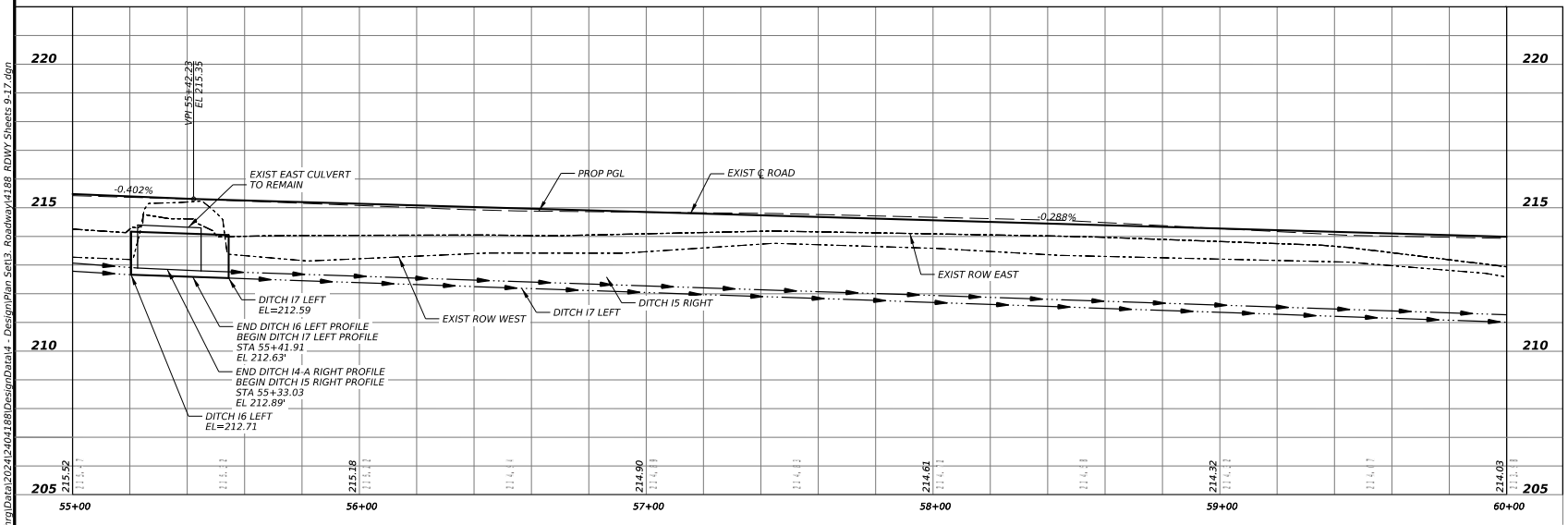
MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 50+00 TO STA 55+00

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		15





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5/29/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 10 OF 23

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 55+00 TO STA 60+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		16

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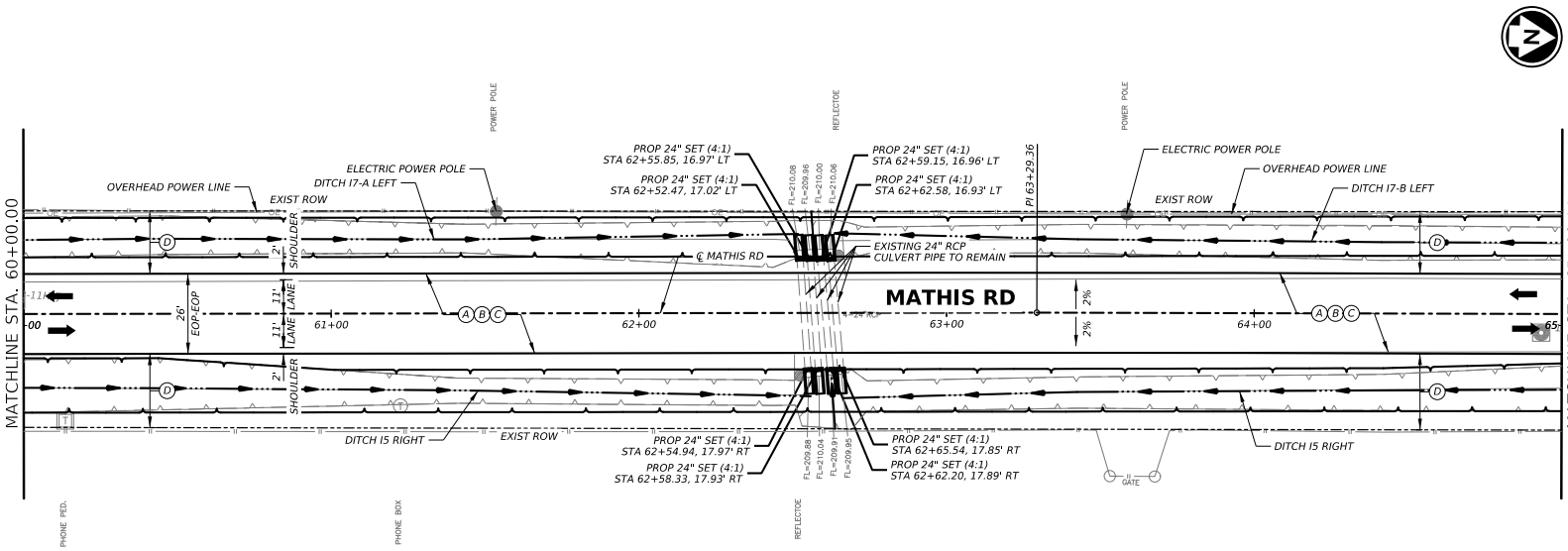

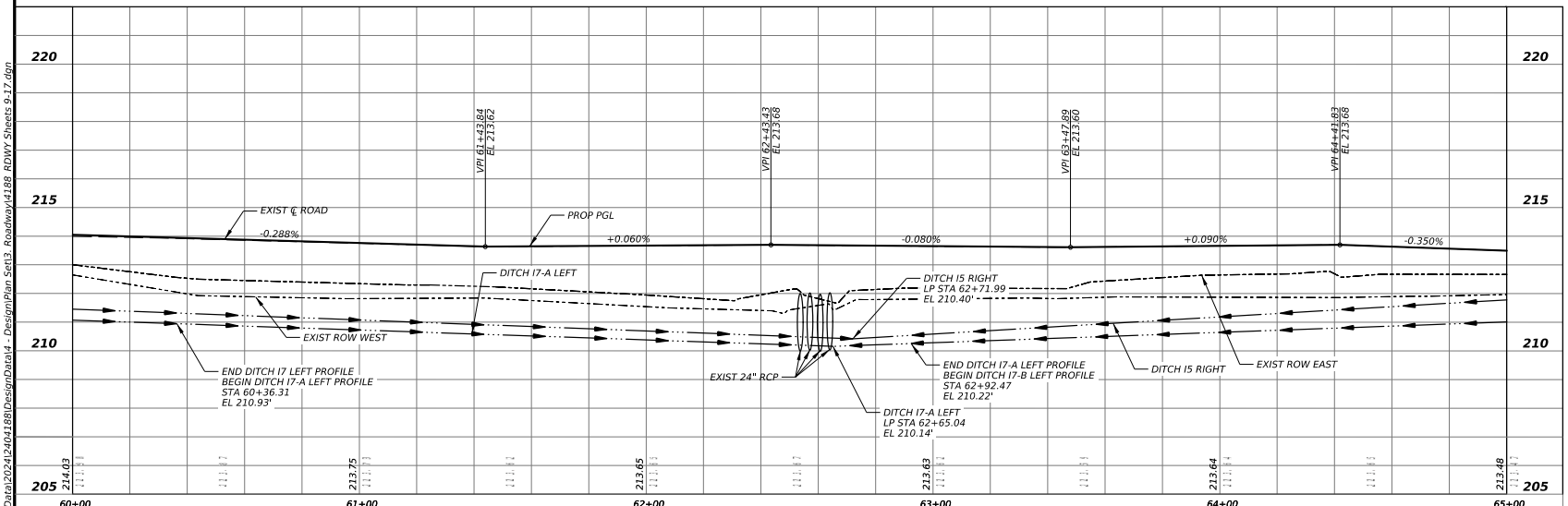

LEGEND

BUBBLE NOTES LEGEND:

- (A) PROP 3" TYPE D HMAC SURFACE COURSE
- (B) PROP 8" CEMENT STABILIZED SUBGRADE
- (C) PROP 8" HMAC BASE COURSE (BLACK BASE)
- (D) HYDROMULCH SEEDING
- PROP DITCH FLOWLINE
- PROP DIRECTION OF TRAVEL
- PROP CULVERT
- EXIST CULVERT
- DW XX PROP DRIVEWAY #

NOTES:

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STATE OF TEXAS — ANDREW CRUMP — 120041 — LICENSED PROFESSIONAL ENGINEER — 5/29/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 11 OF 23

DATE: 5/29/2026 10:40:15 AM
FILE: \\hrgreen.com\hrg\Data\2024\2404188\DesignData\4 - Design\Plan Set\3. Roadway\4188 RDWY Sheets 9-17.dgn

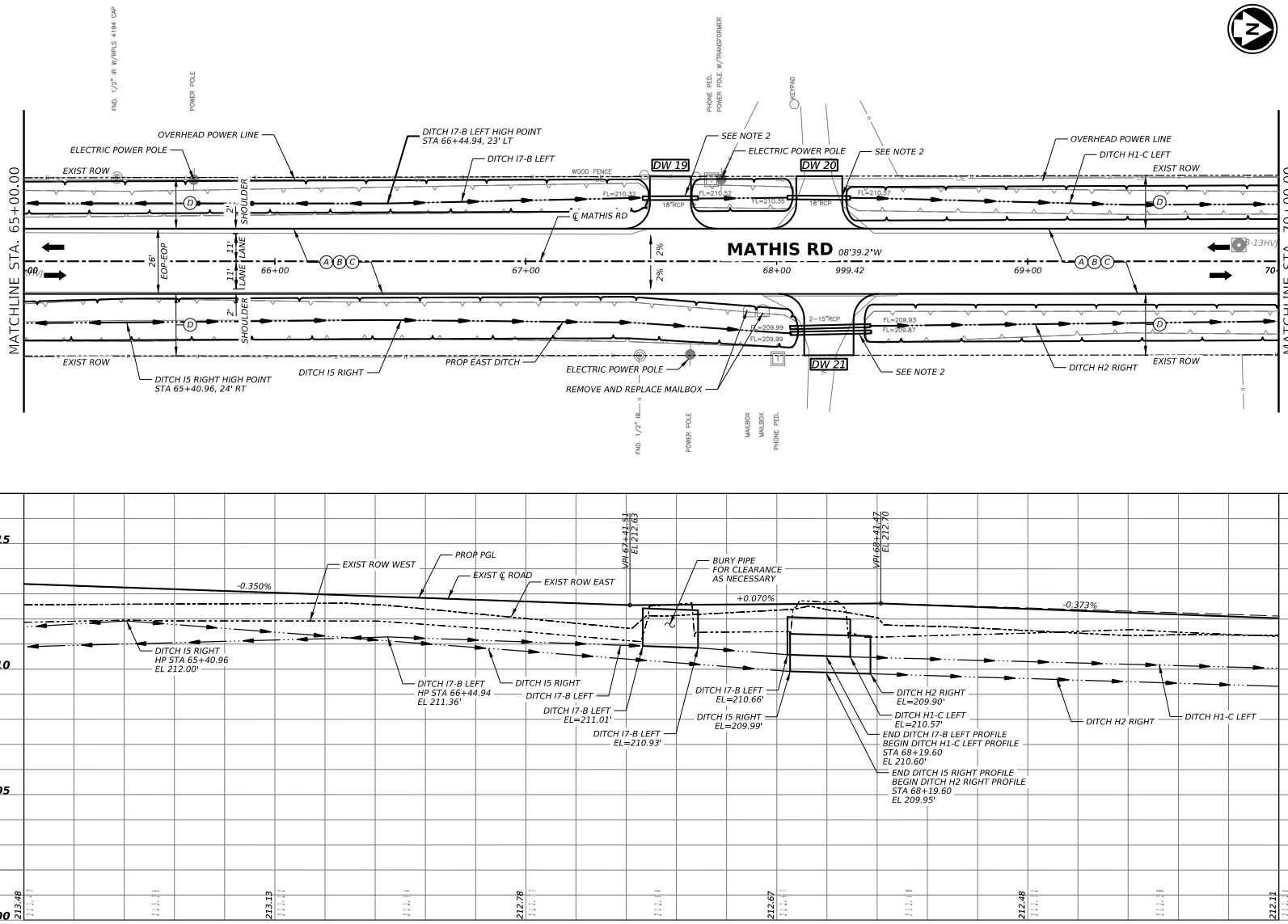
REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 60+00 TO STA 65+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		17



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STATE OF TEXAS — ANDREW CRUMP — 120041 — LICENSED PROFESSIONAL ENGINEER — 6/9/2026

0 20 40 / 0 2 4

SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 12 OF 23

DATE: 6/9/2026 9:38:56 AM
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REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY
ENGINEERING DEPARTMENT

THE STATE OF TEXAS — WALLER COUNTY

PREPARED BY:
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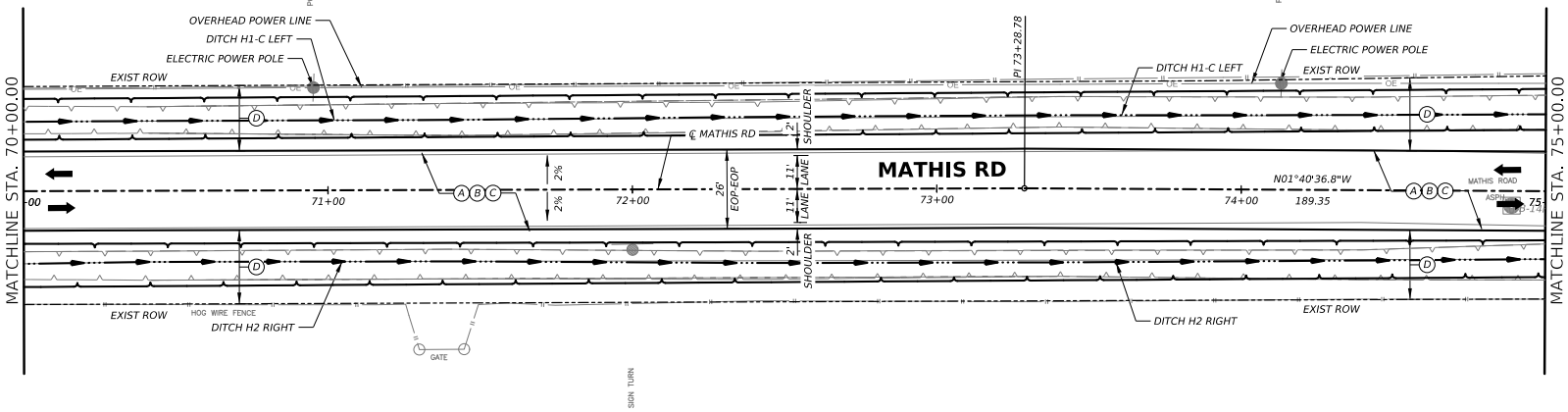
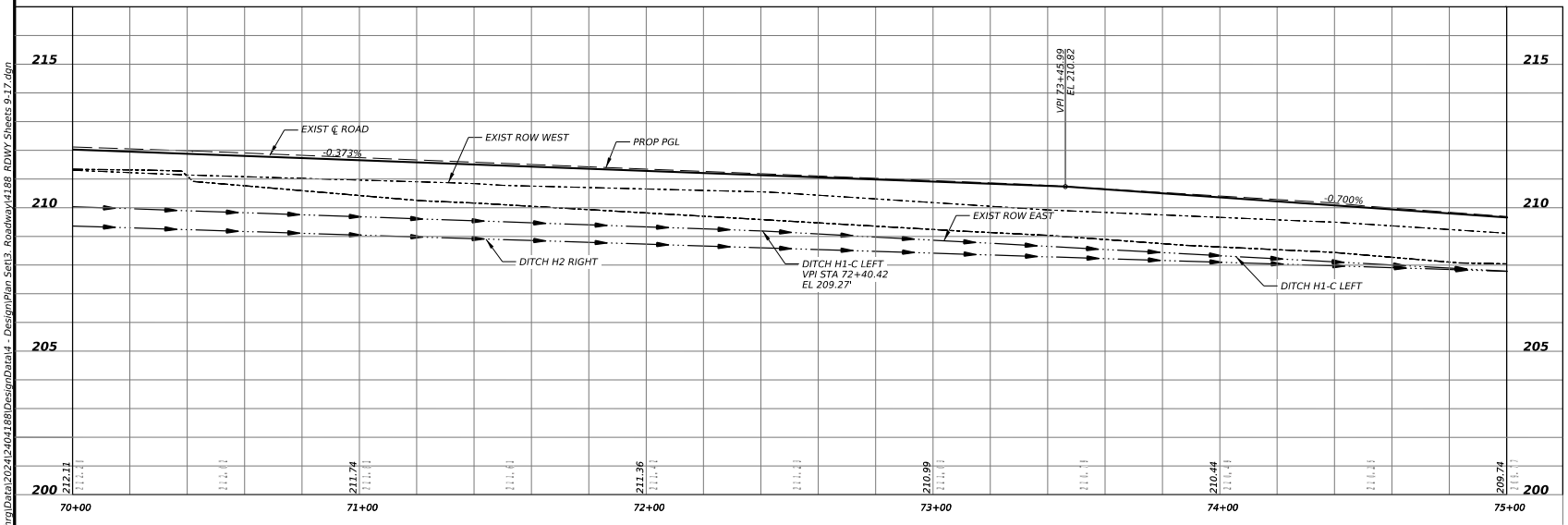
HRGreen.com
Firm No. F-11278

MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 65+00 TO STA 70+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		18





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- EXIST CULVERT
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STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 13 OF 23

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY
ENGINEERING DEPARTMENT

THE STATE OF TEXAS
WALLER COUNTY

PREPARED BY:
HRGreen
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HOUSTON, TX 77042
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HRGreen.com
Firm No. F-11278

MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 70+00 TO STA 75+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		19

DATE: 5/29/2026 10:40:17 AM
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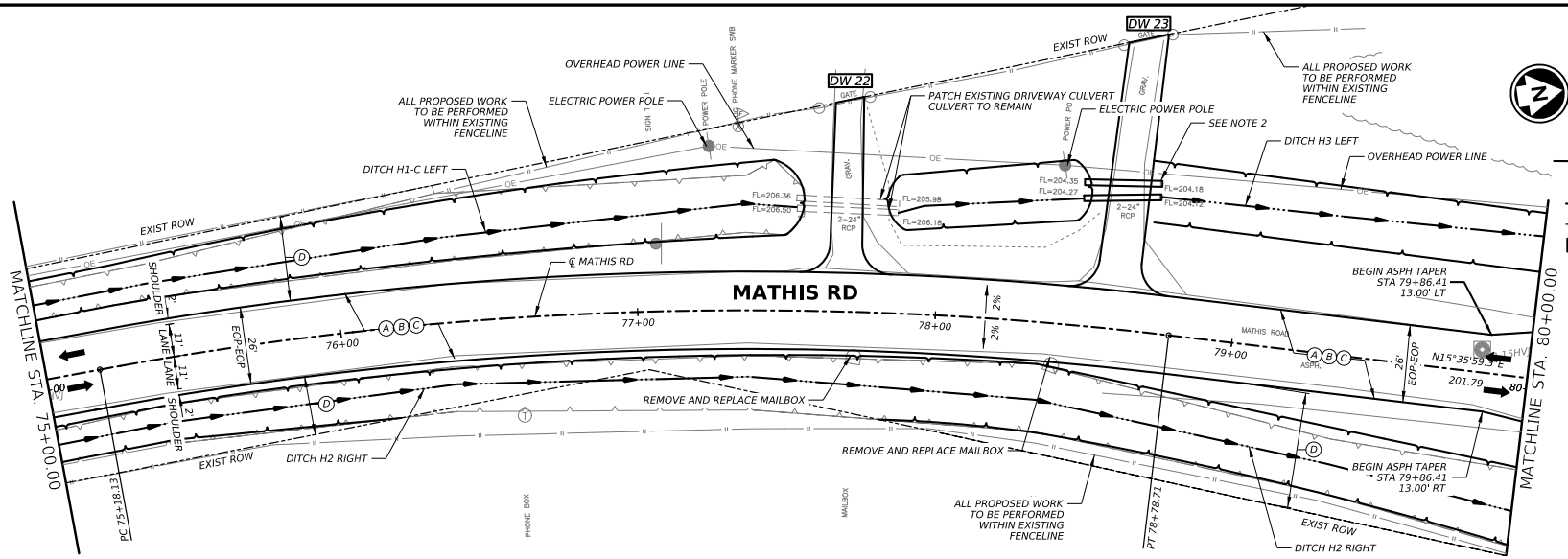

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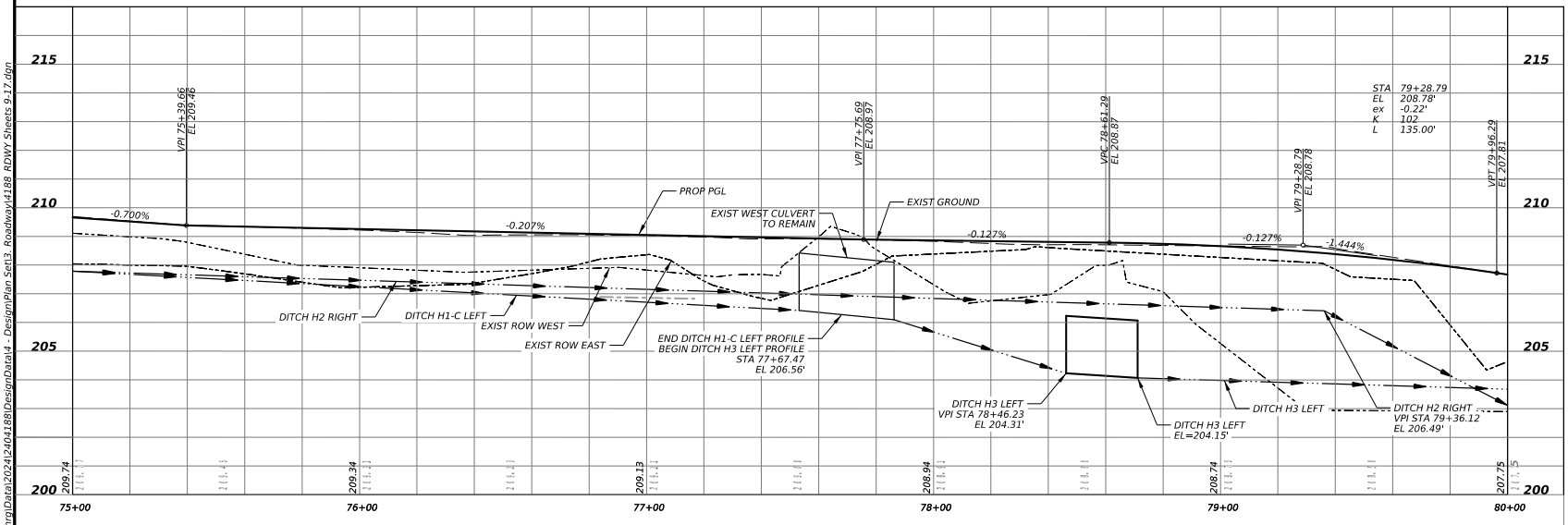


STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 14 OF 23

DATE: 5/29/2026 10:40:18 AM
FILE: \\hrgreen.com\hrg\Data\2024\2404188\DesignData\4 - DesignPlan Set\3- Roadway\4188 RDWY Sheets 9-17.dgn

REV. NO.	DATE	DESCRIPTION	BY

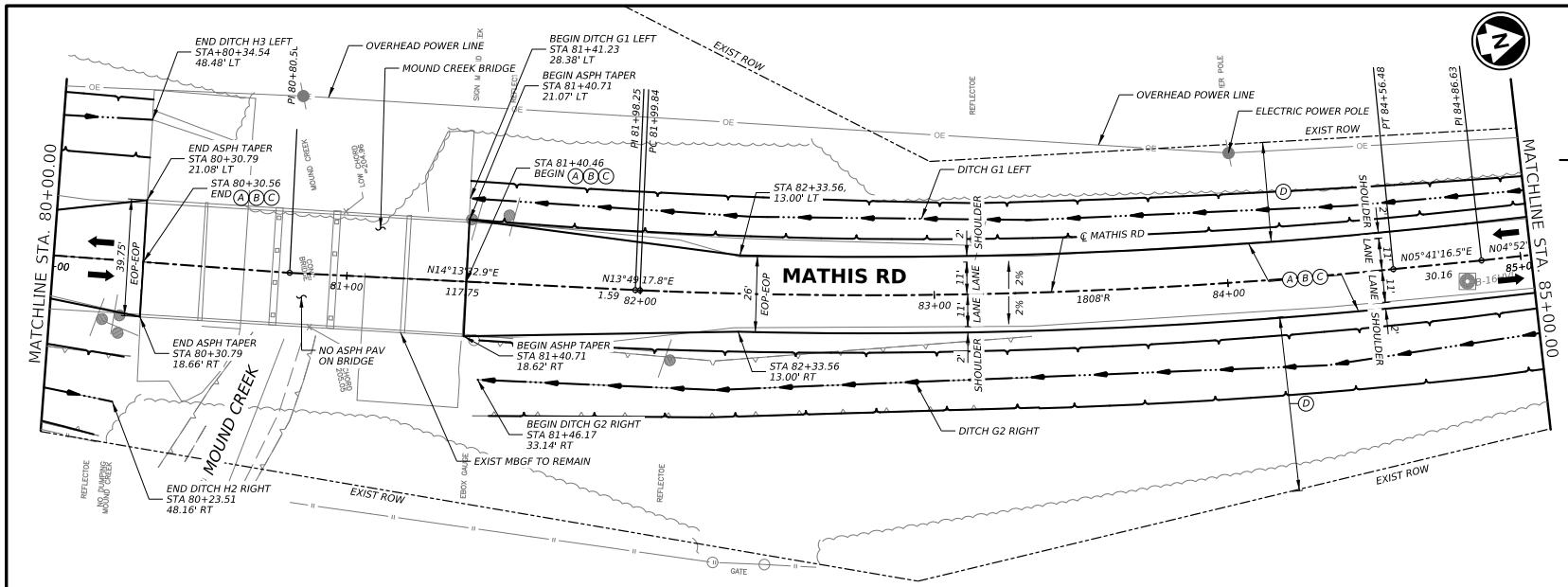
WALLER COUNTY ENGINEERING DEPARTMENT

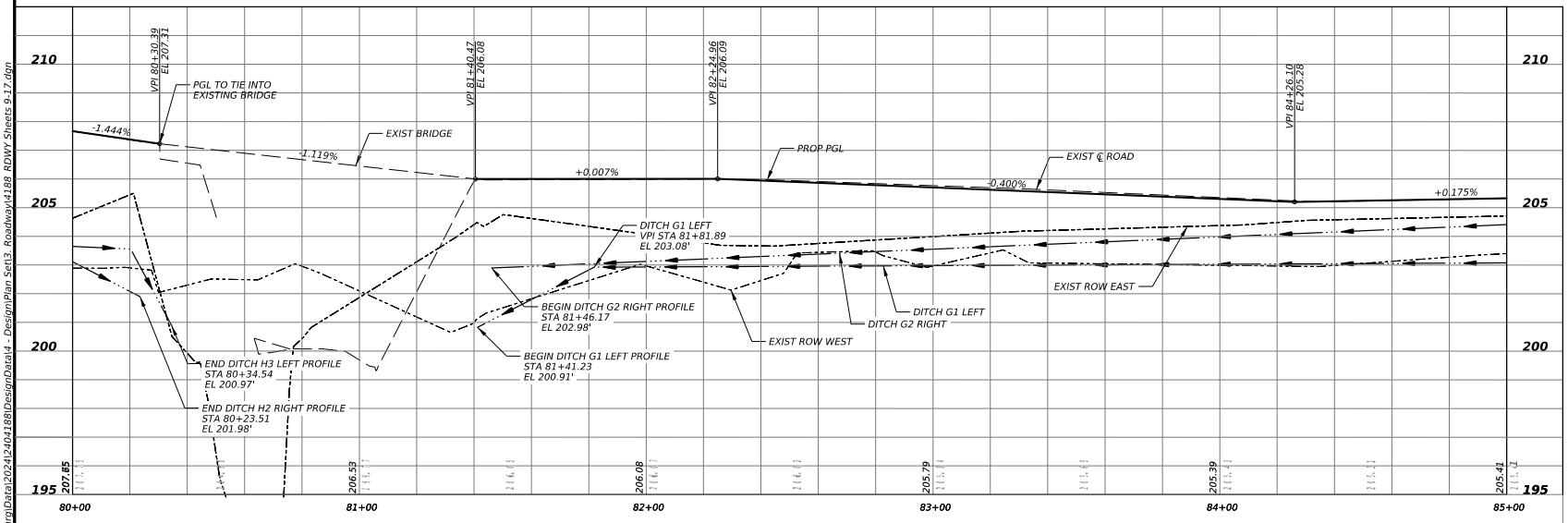
THE STATE OF TEXAS WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 75+00 TO STA 80+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		20





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STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
6/9/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 15 OF 23

DATE: 6/9/2026 11:47:52 AM
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REV. NO.	DATE	DESCRIPTION	BY

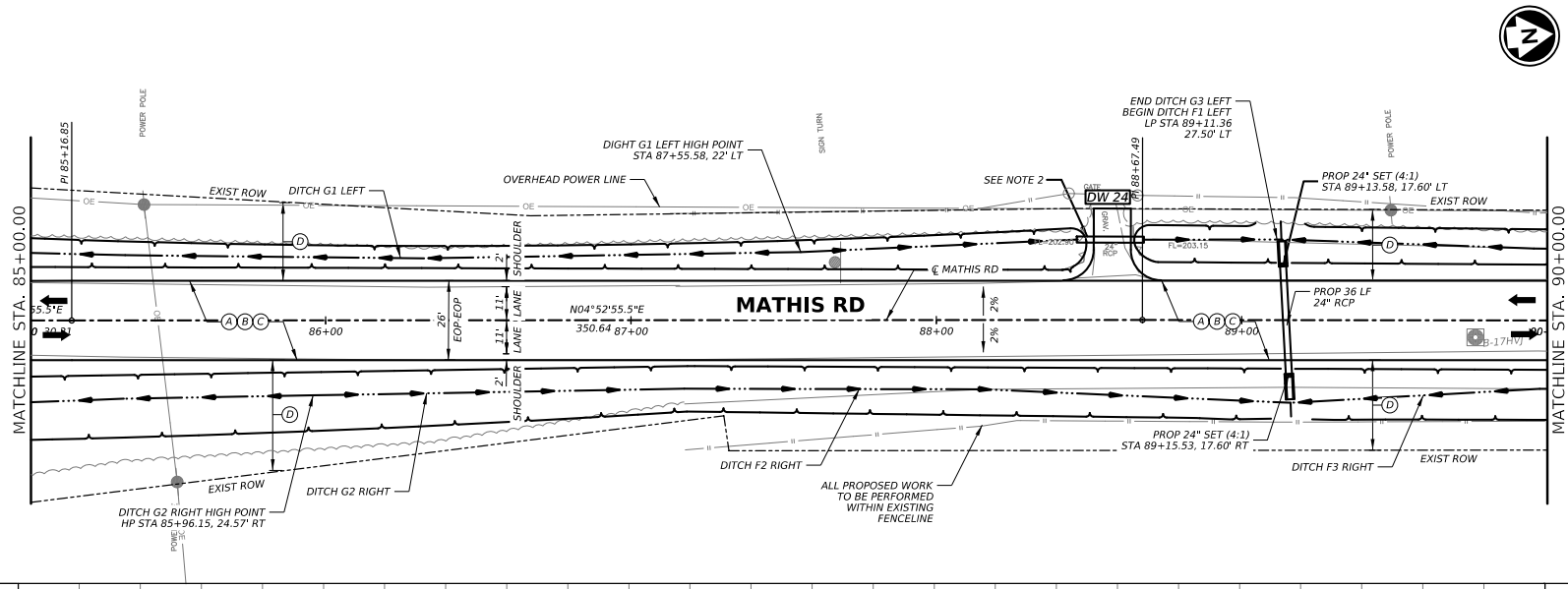
WALLER COUNTY ENGINEERING DEPARTMENT

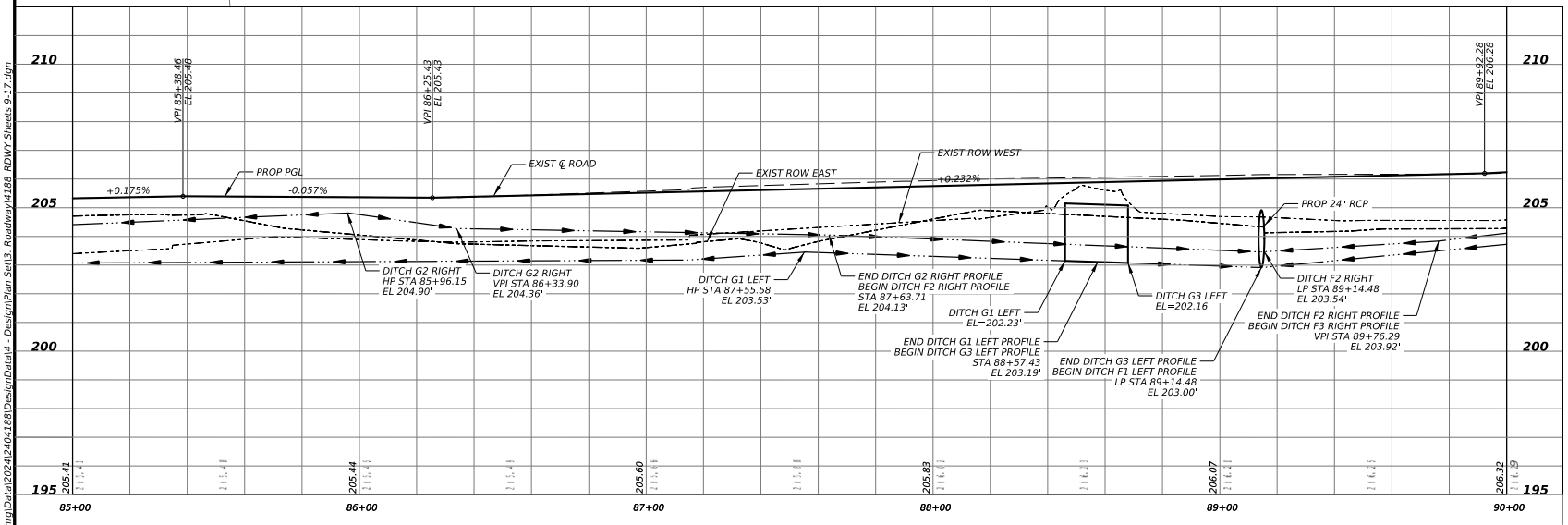
THE STATE OF TEXAS
WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 80+00 TO STA 85+00

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		21





LEGEND

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STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 16 OF 23

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY
ENGINEERING DEPARTMENT

THE STATE OF TEXAS
WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 85+00 TO STA 90+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		22

DATE: 5/29/2026 10:40:20 AM
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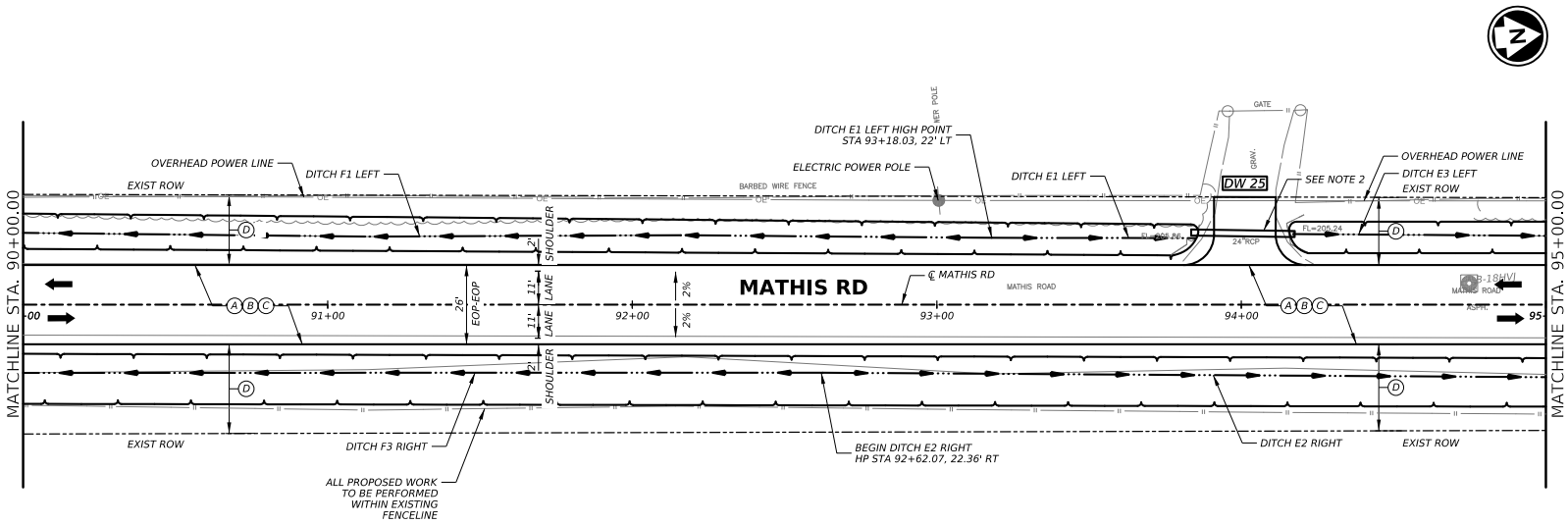

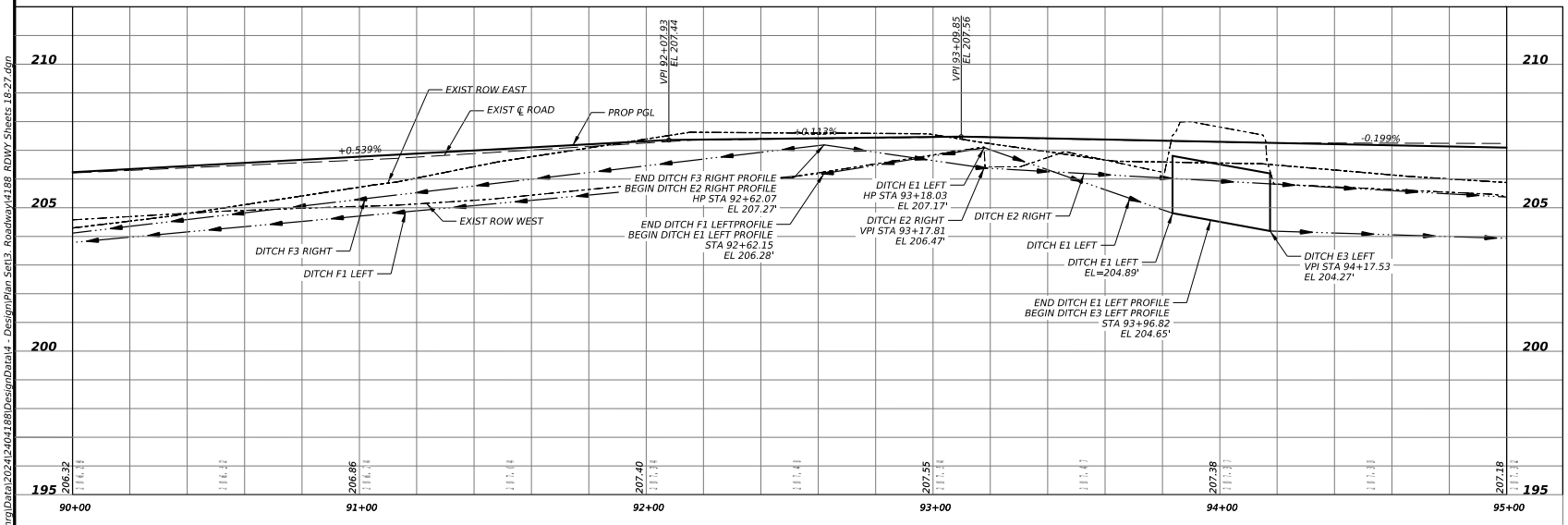

LEGEND

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STATE OF TEXAS
ANDREW CRUMP
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LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 17 OF 23

REV. NO.	DATE	DESCRIPTION	BY

DATE: 5/29/2026 10:40:22 AM
FILE: \\hrgreen.com\hrgi\Data\2024\2404188\DesignData\4 - DesignPlan Set\3- Roadway\4188 RDWY Sheets 18-27.dgn

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS WALLER COUNTY

PREPARED BY:
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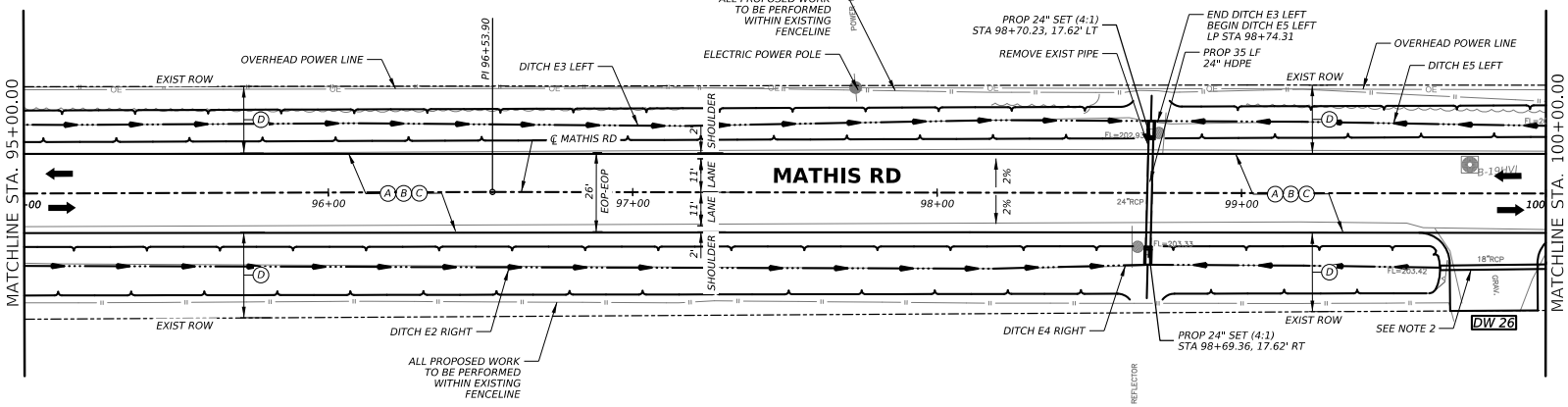
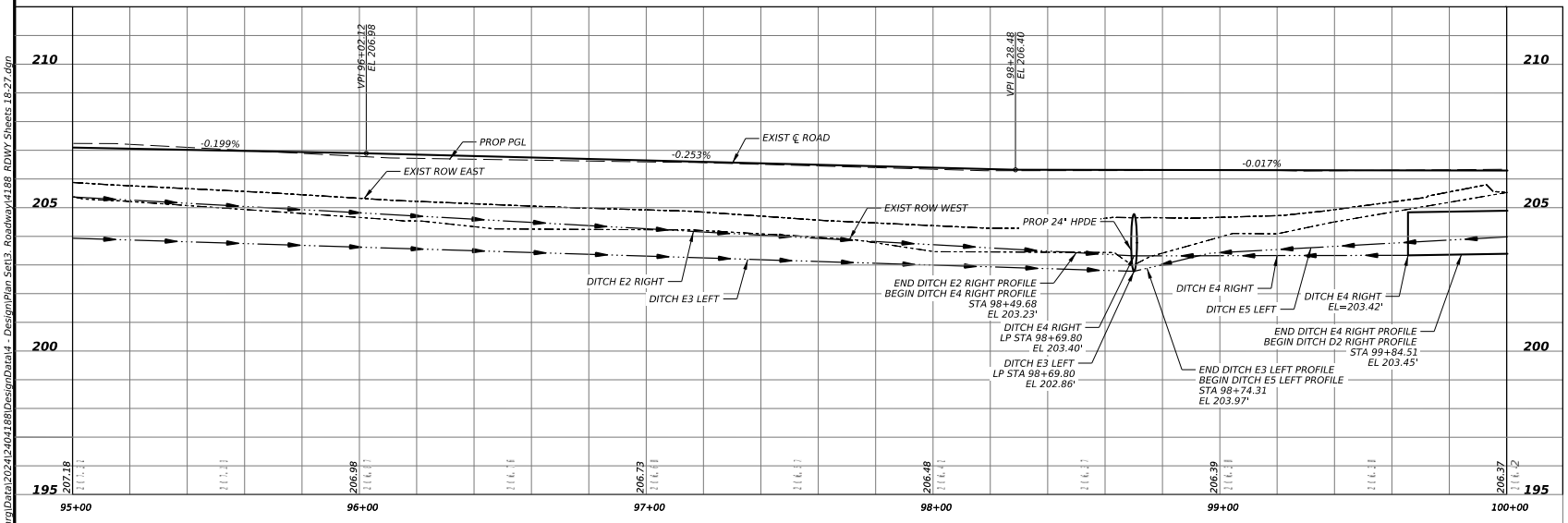
Firm No. F-11278

MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 90+00 TO STA 95+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		23





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STATE OF TEXAS — ANDREW CRUMP — 120041 — LICENSED PROFESSIONAL ENGINEER — 6/9/2026

SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 18 OF 23

DATE: 6/9/2026 4:27:23 PM
FILE: \\hrgreen.com\hrg\Data\2024\2404188\DesignData\4 - Design\Plan Set\3. Roadway\4188 RDWY Sheets 18-27.dgn

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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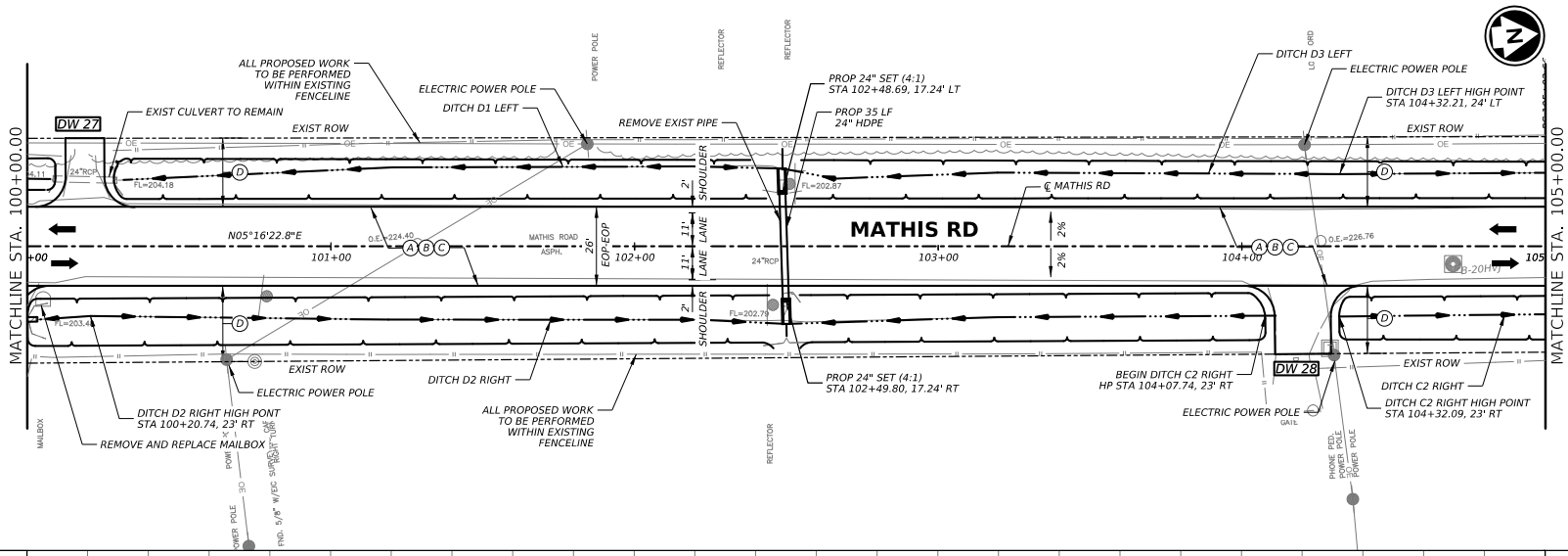
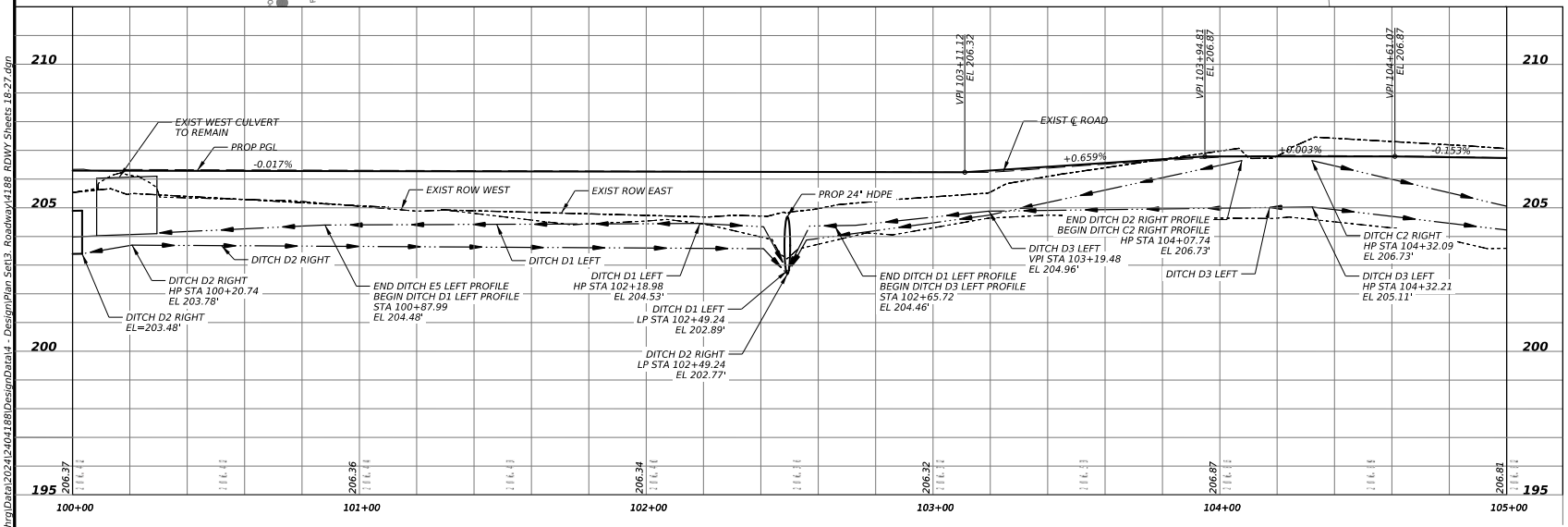
MATHIS ROAD ROADWAY PLAN & PROFILE STA 95+00 TO STA 100+00

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		24





LEGEND

BUBBLE NOTES LEGEND:

- (A) PROP 3" TYPE D HMAC SURFACE COURSE
- (B) PROP 8" CEMENT STABILIZED SUBGRADE
- (C) PROP 8" HMAC BASE COURSE (BLACK BASE)
- (D) HYDROMULCH SEEDING
- PROP DITCH FLOWLINE
- PROP DIRECTION OF TRAVEL
- PROP CULVERT
- EXIST CULVERT
- DW XX PROP DRIVEWAY #

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STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 19 OF 23

REV. NO.	DATE	DESCRIPTION	BY

DATE: 5/29/2026 10:40:24 AM
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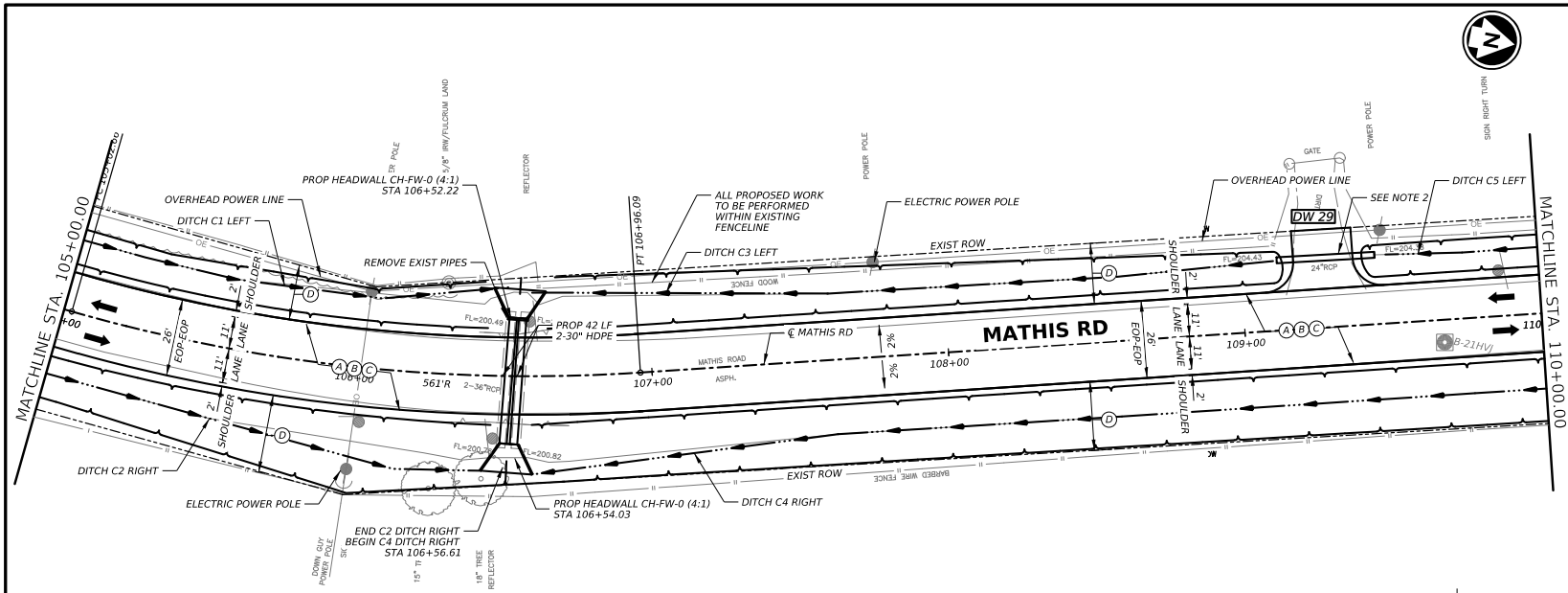
WALLER COUNTY ENGINEERING DEPARTMENT

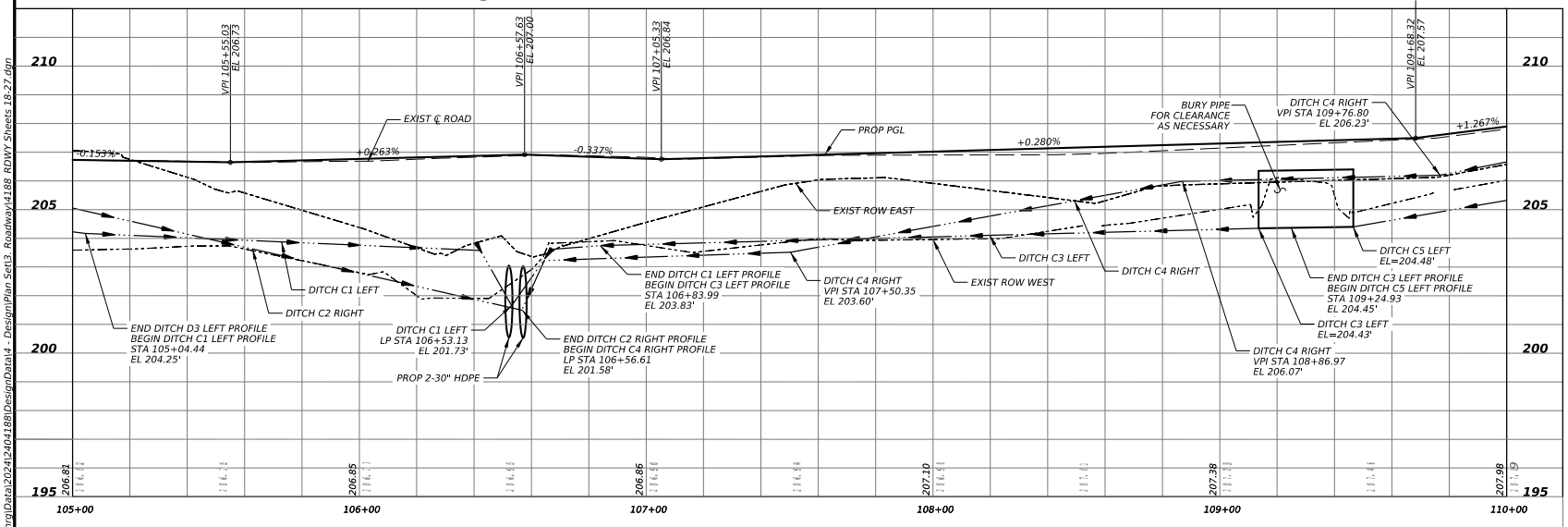
THE STATE OF TEXAS WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 100+00 TO STA 105+00

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		25





LEGEND

BUBBLE NOTES LEGEND:

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- EXIST CULVERT
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STATE OF TEXAS — ANDREW CRUMP — 120041 — LICENSED PROFESSIONAL ENGINEER — 6/9/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 20 OF 23

DATE: 6/9/2026 9:17:19 AM
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REV. NO.	DATE	DESCRIPTION	BY

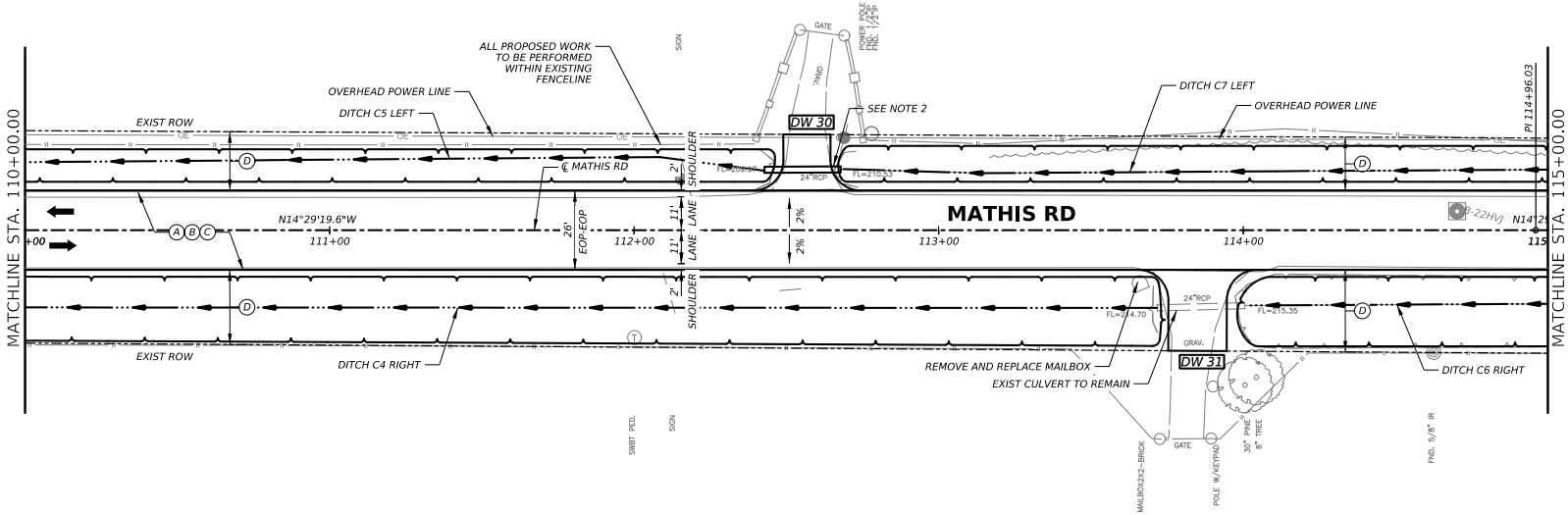
WALLER COUNTY ENGINEERING DEPARTMENT

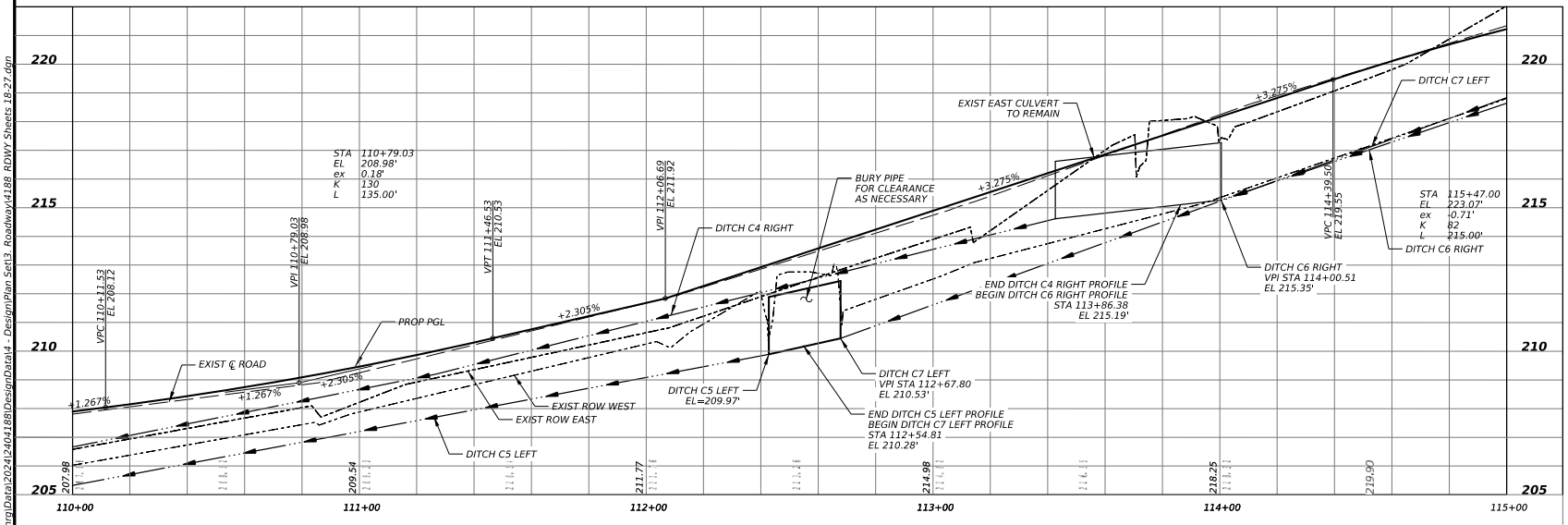
THE STATE OF TEXAS — WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 105+00 TO 110+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		26





LEGEND

BUBBLE NOTES LEGEND:

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- PROP CULVERT
- EXIST CULVERT
- DW XX PROP DRIVEWAY #

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STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 21 OF 23

DATE: 6/9/2026 9:17:20 AM
FILE: \\hrgreen.com\hrg\Data\2024\24041\8\Design\Data\4 - Design\Plan Set\3. Roadway\4188 RDWY Sheets 18-27.dgn

REV. NO.	DATE	DESCRIPTION	BY

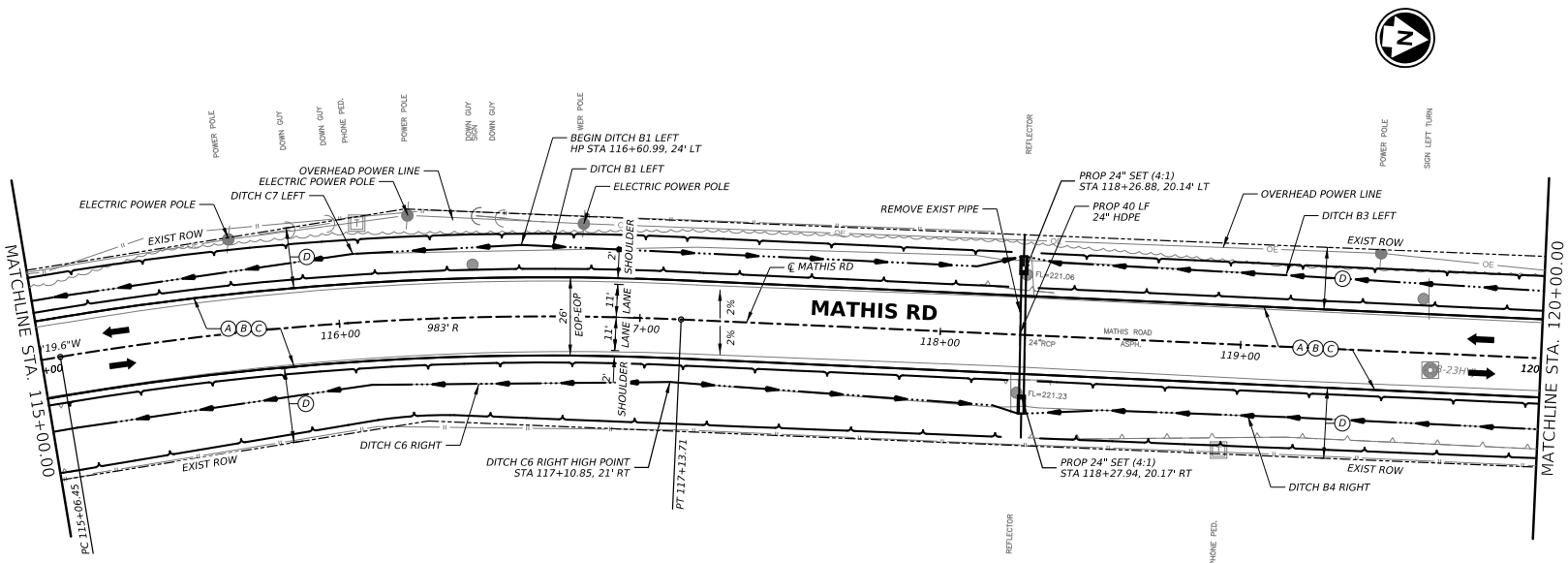
WALLER COUNTY ENGINEERING DEPARTMENT

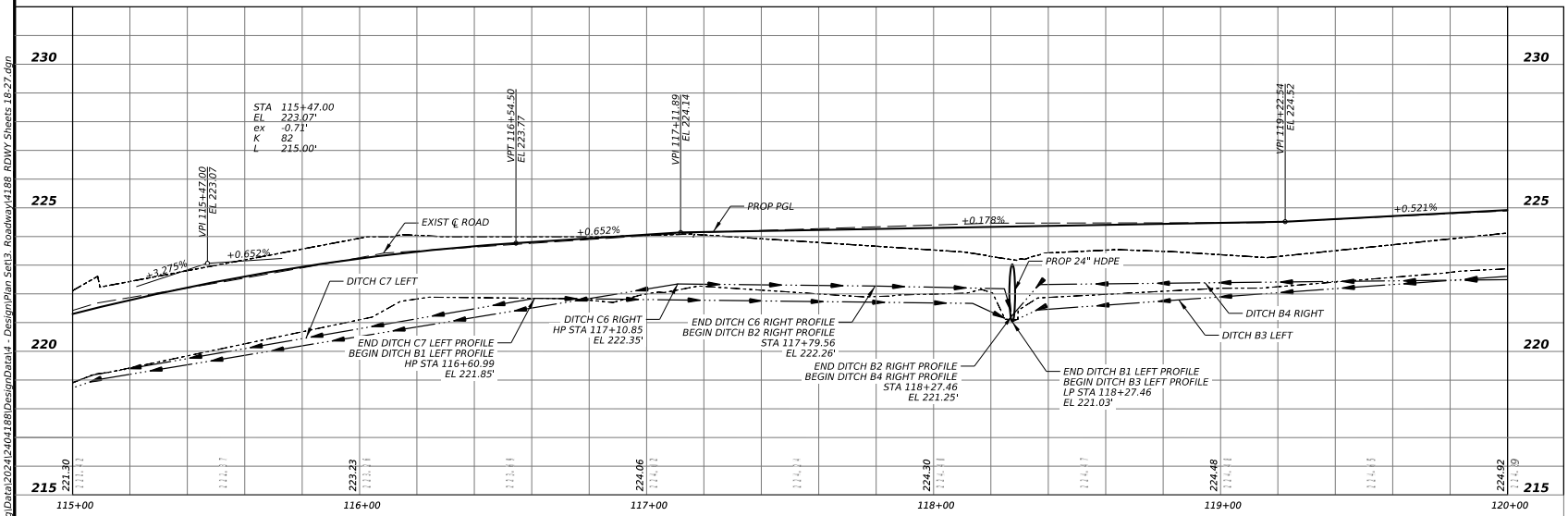
THE STATE OF TEXAS WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD ROADWAY PLAN & PROFILE STA 110+00 TO STA 115+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		27





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STATE OF TEXAS — ANDREW CRUMP — 120041 — LICENSED PROFESSIONAL ENGINEER — 6/9/2026

SCALE IN FEET
1"=40' HORIZONTAL
1"=4' VERTICAL

SHEET 22 OF 23

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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11011 RICHMOND AVE, SUITE 200
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Firm No. F-11278

MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 115+00 TO STA 120+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		28

DATE: 6/9/2026 4:21:01 PM
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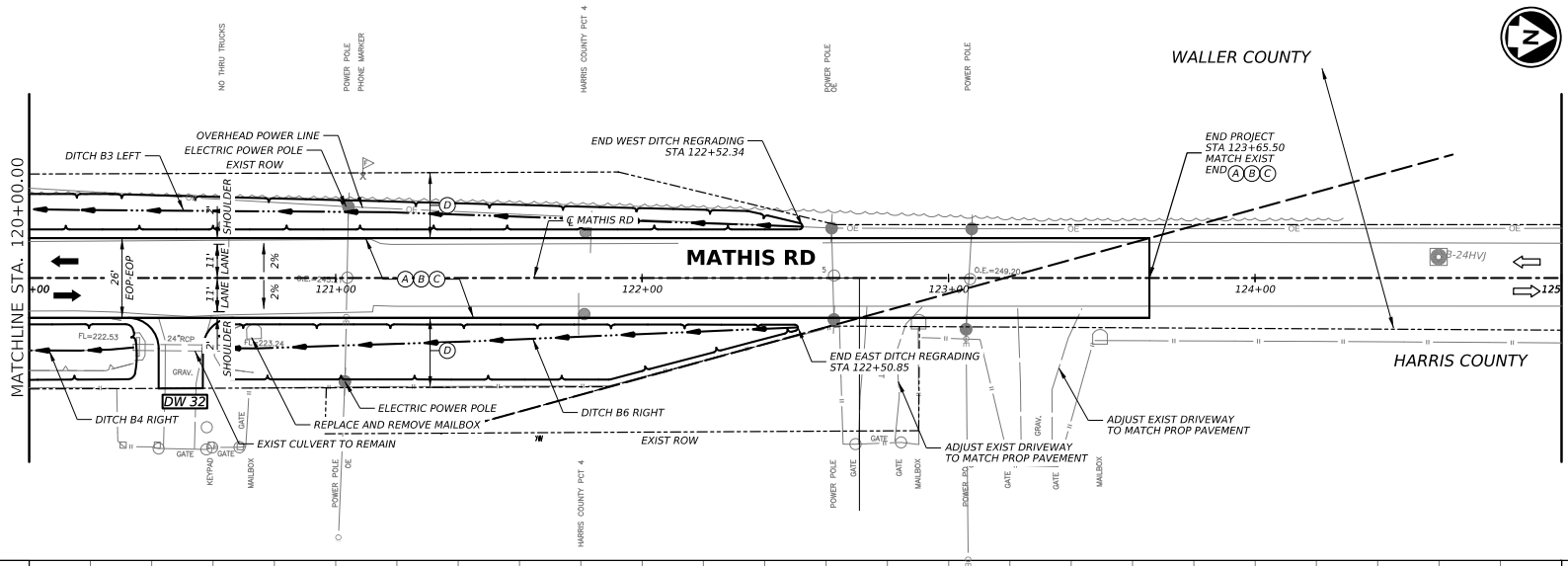

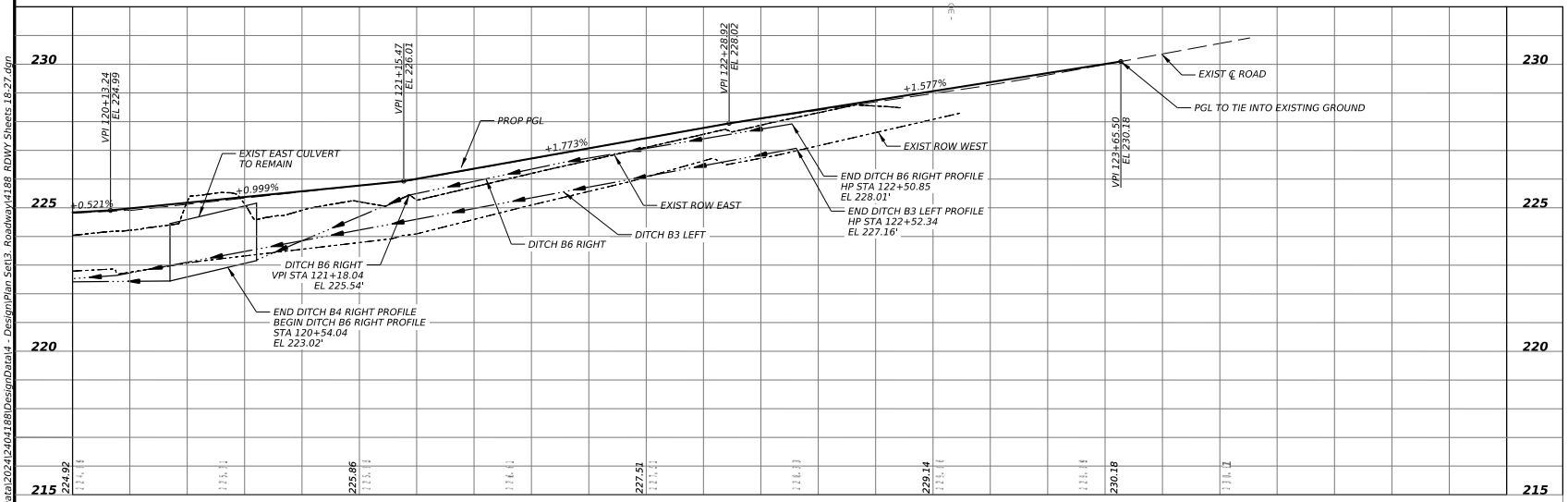

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LICENSED
PROFESSIONAL ENGINEER
5/29/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 23 OF 23

DATE: 5/29/2026 10:40:27 AM
FILE: \\hrgreen.com\hrg\Data\2024\240418B\DesignData\4 - Design\Plan Set\3. Roadway\4188 RDWY Sheets 18-27.dgn

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS WALLER COUNTY

PREPARED BY:
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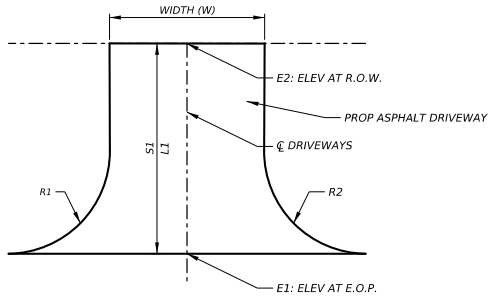
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD
ROADWAY PLAN
& PROFILE
STA 120+00 TO END PROJECT

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		29

DRIVEWAY TABLE								
DRIVEWAY NAME	STATION	RADIUS	PROPOSED DRIVEWAY WIDTH	PROPOSED DRIVEWAY LENGTH (L1)	EXISTING DRIVEWAY MATERIAL	PROPOSED ELEV AT E.O.P	PROPOSED ELEV AT R.O.W.	PROPOSED SLOPE % (S1)
DW 1	13+49.75 RT	10'LT/RT	14'	23.8'	GRAVEL	224.6635	225.3167	4% E.O.P. TO PIPE 1% PIPE TO R.O.W
DW 2	14+25.98 LT	10'LT/RT	20'	20.3'	GRAVEL	223.2431	224	4%
DW 3	16+08.39 LT	10'LT/RT	16'	20.5'	GRAVEL	219.4979	219.1578	-2%
DW 4	19+16.24 LT	10'LT/RT	20'	20.9'	ASPHALT	214.7935	215.403	3%
DW 5	21+43.86 LT	10'LT/RT	18'	21.1'	GRAVEL	212.7415	213	1%
DW 6	23+19.62 LT	10'LT/RT	13'	21.2'	GRAVEL	212.3723	212	-2%
DW 7	31+96.04 LT	10'LT/RT	12'	22.0'	GRAVEL	212.8068	212.1883	-3%
DW 8	34+55.32 RT	10'LT/RT	24'	21.8'	GRAV/ASPH	215.604	215.55	0%
DW 9	35+21.92 LT	10'LT/RT	15'	22.3'	GRAVEL	216.7084	216.7383	0%
DW 10	37+85.30 LT	10'LT/RT	14'	22.5'	GRAVEL	220.4146	220.0901	-1%
DW 11	39+80.89 RT	10'LT/RT	12'	21.3'	GRASS	221.8389	221.0611	-4%
DW 12	40+24.59 LT	10'LT/RT	17'	22.7'	GRAVEL	222.1091	222.4737	2%
DW 13	41+97.19 LT	10'LT/RT	15'	22.9'	GRAVEL	222.8807	223.3224	2%
DW 14	43+11.15 LT	10'LT/RT	18'	23.0'	GRAVEL	223.0765	223.1345	0%
DW 15	45+90.95 RT	10'LT/RT	15'	20.8'	GRAVEL	223.2537	224.243	5%
DW 16	49+53.09 RT	10'LT/RT	20'	21.5'	GRAVEL	219.6577	219.727	0%
DW 17	51+59.05 LT	5'LT/RT	23'	22.1'	GRASS	217.4712	216.5245	-4%
DW 18	55+36.26 LT	10'LT/RT	19'	21.5'	GRAVEL	215.1023	215.2174	1%
DW 19	67+57.63 LT	10'LT/RT	16'	20.8'	GRASS	212.3843	212.6777	1%
DW 20	68+16.93 LT	10'LT/RT	19'	21.0'	ASPHALT	212.4264	212.9101	2%
DW 21	68+20.78 RT	10'LT/RT	20'	24.4'	GRAVEL	212.4291	212.4403	0%
DW 22	77+69.41 LT	10'LT/RT	10'	58.2'	GRAVEL	208.7167	209.0433	1%
DW 23	78+61.79 LT	10'LT/RT	14'	85.4'	GRAVEL	208.5287	208.3589	0%
DW 24	88+57.68 LT	10'LT/RT	13'	23.5'	GRAVEL	205.893	205.6964	-1%
DW 25	94+01.16 LT	10'LT/RT	21'	22.3'	GRAVEL	207.0929	208.25	5%
DW 26	99+83.00 RT	10'LT/RT	29'	25.7'	GRAVEL	206.1542	205.7679	-2%
DW 27	100+18.93 LT	10'LT/RT	13'	22.6'	GRAVEL	206.1562	206.251	0%
DW 28	104+20.18 RT	10'LT/RT	19'	22.5'	DIRT	206.6452	207.0634	2%
DW 29	109+27.68 LT	10'LT/RT	20'	20.1'	DIRT	207.1308	206.4576	-3%
DW 30	112+56.71 LT	10'LT/RT	16'	18.5'	GRAVEL	213.4614	212.7804	-4%
DW 31	113+84.95 RT	10'LT/RT	20'	26.6'	GRAVEL	217.817	218.5767	3%
DW 32	120+49.46 RT	10'LT/RT	15'	23.0'	GRAVEL	225.133	225.661	2%

* E.O.P.= EDGE OF PAVEMENT



DETAIL A

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

DATE: 6/9/2026 1:27:04 PM
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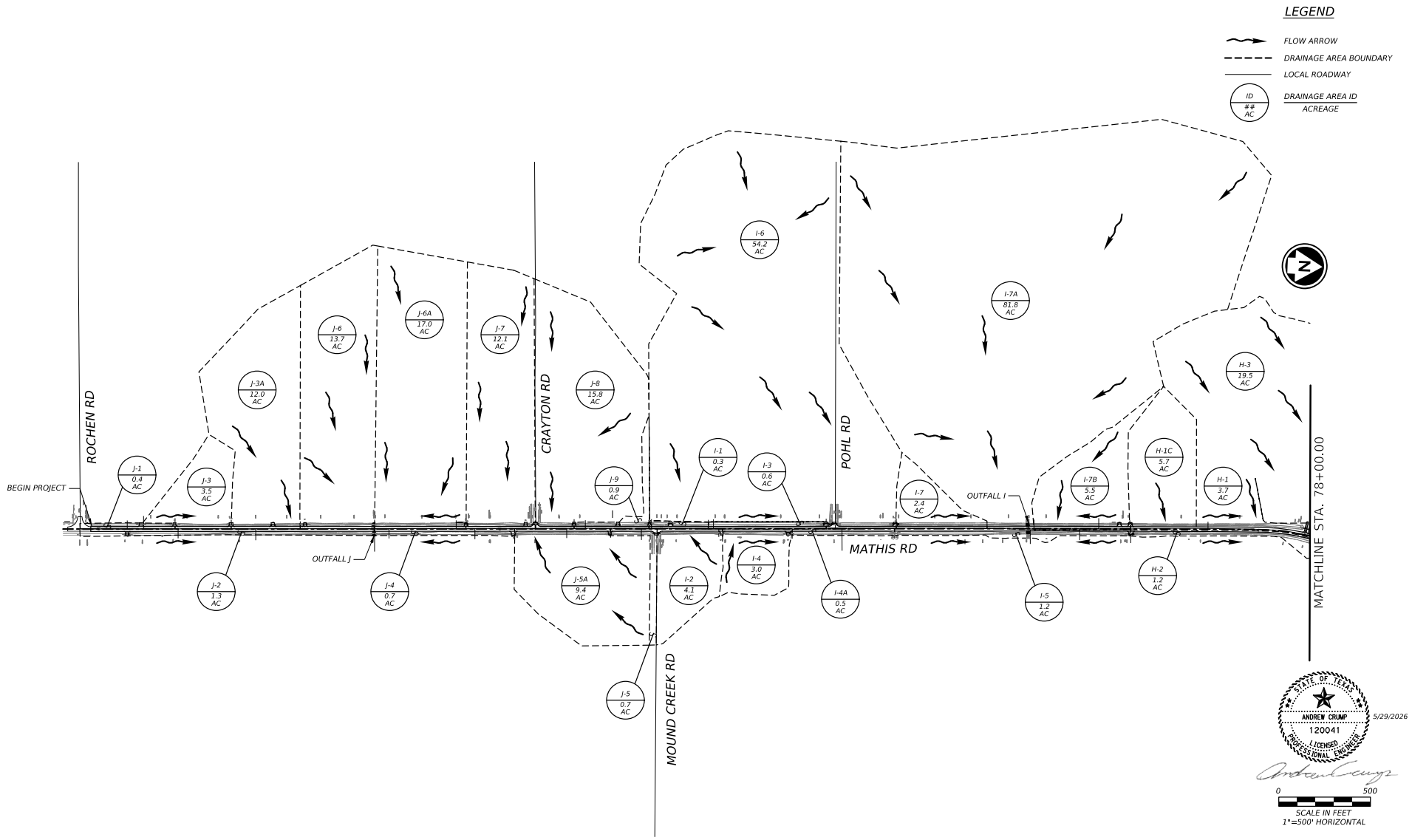
REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

DRIVEWAY TABLE

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		30



STATE OF TEXAS
ANDREW CRUMP
120041
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5/29/2026

SHEET 1 OF 2

REV. NO.	DATE	DESCRIPTION	BY

DATE: 5/29/2026 10:40:31 AM
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WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS WALLER COUNTY

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(713) 965-9996
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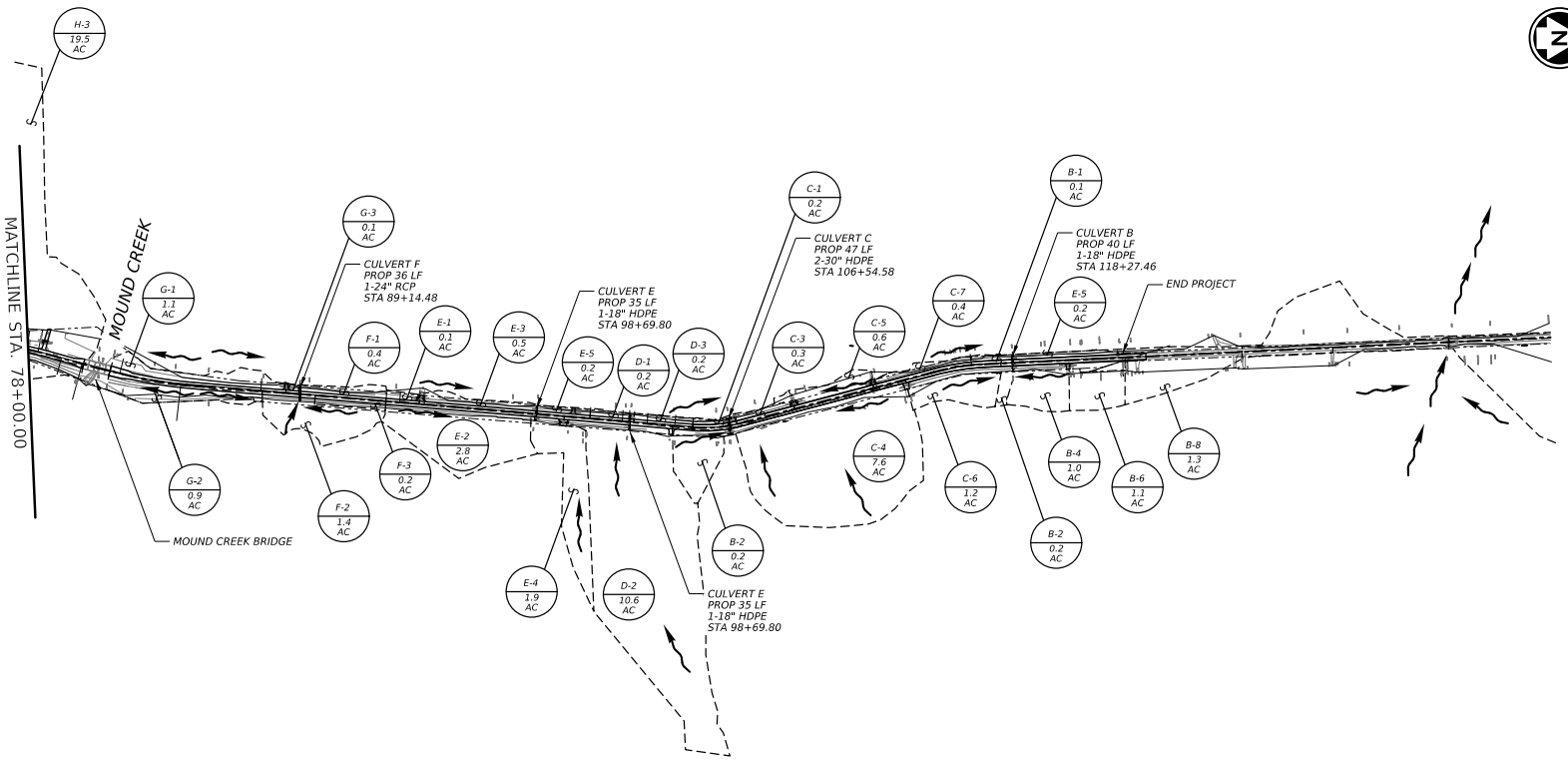
Firm No. F-11278

DRAINAGE AREA MAP

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		31



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SHEET 2 OF 2

REV. NO.	DATE	DESCRIPTION	BY

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DRAINAGE AREA MAP

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		32

DATE: 5/29/2026 10:40:32 AM
FILE: \\hrgreen.com\hrg\Data\2024\2404188\DesignData\4 - DesignPlan Set\5. Drainage\4188 PR DAM.dgn

PROPOSED DITCH HYDROLOGIC CALCULATIONS

D.A. ID	t_c CALC (min)	t_c USED (min)	Flow Calculations														
			A (acres)	C	I_c (in/h)	I_{10} (in/h)	I_{25} (in/h)	I_{50} (in/h)	I_{100} (in/h)	Q_c (cfs)	Q_{10} (cfs)	Cf_{25}	Q_{25} (cfs)	Cf_{50}	Q_{50} (cfs)	Cf_{100}	Q_{100} (cfs)
B-1	1	10	0.14	0.48	6.52	7.49	8.80	9.77	10.75	0.43	0.49	1.10	0.63	1.10	0.70	1.25	0.88
B-2	5	10	0.19	0.34	6.52	7.49	8.80	9.77	10.75	0.42	0.48	1.10	0.62	1.10	0.69	1.25	0.86
B-3	6	10	0.68	0.49	6.52	7.49	8.80	9.77	10.75	2.16	2.47	1.10	3.20	1.10	3.55	1.25	4.44
B-4	8	10	1.04	0.36	6.52	7.49	8.80	9.77	10.75	2.42	2.78	1.10	3.59	1.10	3.99	1.25	4.99
B-6	9	10	1.05	0.34	6.52	7.49	8.80	9.77	10.75	2.29	2.63	1.10	3.40	1.10	3.77	1.25	4.72
B-8	15	15	1.34	0.36	5.57	6.41	7.56	8.41	9.30	2.67	3.07	1.10	3.98	1.10	4.43	1.25	5.57
C-1	1	10	0.18	0.59	6.52	7.49	8.80	9.77	10.75	0.69	0.79	1.10	1.02	1.10	1.13	1.25	1.41
C-2	10	10	1.05	0.31	6.52	7.49	8.80	9.77	10.75	2.13	2.45	1.10	3.16	1.10	3.51	1.25	4.39
C-3	3	10	0.29	0.44	6.52	7.49	8.80	9.77	10.75	0.83	0.95	1.10	1.23	1.10	1.36	1.25	1.70
C-4	21	21	7.57	0.32	4.77	5.50	6.52	7.27	8.07	11.50	13.28	1.10	17.29	1.10	19.29	1.25	24.33
C-5	6	10	0.60	0.29	6.52	7.49	8.80	9.77	10.75	1.14	1.30	1.10	1.69	1.10	1.87	1.25	2.34
C-6	7	10	1.20	0.37	6.52	7.49	8.80	9.77	10.75	2.85	3.27	1.10	4.22	1.10	4.69	1.25	5.86
C-7	3	10	0.39	0.48	6.52	7.49	8.80	9.77	10.75	1.21	1.39	1.10	1.79	1.10	1.99	1.25	2.49
D-1	2	10	0.16	0.51	6.52	7.49	8.80	9.77	10.75	0.52	0.60	1.10	0.78	1.10	0.86	1.25	1.08
D-2	54	54	10.56	0.27	2.79	3.26	3.92	4.42	4.98	7.88	9.21	1.10	12.17	1.10	13.74	1.25	17.58
D-3	2	10	0.22	0.54	6.52	7.49	8.80	9.77	10.75	0.79	0.91	1.10	1.18	1.10	1.31	1.25	1.63
E-1	3	10	0.13	0.48	6.52	7.49	8.80	9.77	10.75	0.42	0.48	1.10	0.62	1.10	0.69	1.25	0.86
E-2	21	21	2.78	0.33	4.77	5.50	6.52	7.27	8.07	4.31	4.97	1.10	6.47	1.10	7.22	1.25	9.11
E-3	4	10	0.50	0.49	6.52	7.49	8.80	9.77	10.75	1.59	1.83	1.10	2.36	1.10	2.62	1.25	3.28
E-4	29	29	1.90	0.31	4.03	4.67	5.55	6.22	6.93	2.35	2.72	1.10	3.56	1.10	3.99	1.25	5.06
E-5	2	10	0.19	0.54	6.52	7.49	8.80	9.77	10.75	0.66	0.76	1.10	0.98	1.10	1.09	1.25	1.36
F-1	4	10	0.39	0.44	6.52	7.49	8.80	9.77	10.75	1.12	1.28	1.10	1.66	1.10	1.84	1.25	2.30
F-2	11	11	1.44	0.32	6.30	7.24	8.51	9.46	10.41	2.91	3.34	1.10	4.32	1.10	4.80	1.25	6.00
F-3	3	10	0.23	0.47	6.52	7.49	8.80	9.77	10.75	0.71	0.81	1.10	1.05	1.10	1.17	1.25	1.46
G-1	5	10	1.06	0.41	6.52	7.49	8.80	9.77	10.75	2.83	3.25	1.10	4.19	1.10	4.66	1.25	5.82
G-2	5	10	0.94	0.37	6.52	7.49	8.80	9.77	10.75	2.28	2.61	1.10	3.38	1.10	3.75	1.25	4.69
G-3	1	10	0.05	0.52	6.52	7.49	8.80	9.77	10.75	0.16	0.19	1.10	0.24	1.10	0.27	1.25	0.34
H-1	23	23	3.73	0.33	4.56	5.26	6.24	6.97	7.74	5.67	6.55	1.10	8.54	1.10	9.54	1.25	12.05
H-1C	27	27	5.74	0.34	4.19	4.85	5.76	6.44	7.18	8.23	9.52	1.10	12.44	1.10	13.92	1.25	17.62
H-2	8	10	1.24	0.33	6.52	7.49	8.80	9.77	10.75	2.69	3.09	1.10	4.00	1.10	4.44	1.25	5.55
H-3	52	52	19.48	0.31	2.86	3.34	4.01	4.52	5.09	17.32	20.21	1.10	26.71	1.10	30.12	1.25	38.53
I-1	2	10	0.30	0.43	6.52	7.49	8.80	9.77	10.75	0.83	0.95	1.10	1.23	1.10	1.37	1.25	1.71
I-2	15	15	4.06	0.04	5.57	6.41	7.56	8.41	9.30	0.92	1.06	1.10	1.37	1.10	1.52	1.25	1.91
I-3	4	10	0.60	0.46	6.52	7.49	8.80	9.77	10.75	1.81	2.08	1.10	2.69	1.10	2.99	1.25	3.73
I-4	15	15	2.96	0.06	5.57	6.41	7.56	8.41	9.30	0.96	1.10	1.10	1.43	1.10	1.59	1.25	2.00
I-4A	4	10	0.46	0.57	6.52	7.49	8.80	9.77	10.75	1.70	1.95	1.10	2.52	1.10	2.80	1.25	3.50
I-5	5	10	1.19	0.49	6.52	7.49	8.80	9.77	10.75	3.79	4.36	1.10	5.63	1.10	6.25	1.25	7.81
I-6	78	78	54.16	0.33	2.20	2.58	3.12	3.55	4.02	38.81	45.58	1.10	60.73	1.10	68.93	1.25	88.78
I-7	16	16	2.42	0.34	5.41	6.23	7.36	8.19	9.06	4.42	5.09	1.10	6.60	1.10	7.35	1.25	9.24
I-7A	88	88	81.75	0.31	2.02	2.38	2.89	3.29	3.74	51.12	60.16	1.10	80.37	1.10	91.41	1.25	117.98
I-7B	28	28	5.50	0.33	4.11	4.76	5.66	6.33	7.05	7.45	8.62	1.10	11.27	1.10	12.61	1.25	15.98
J-1	4	10	0.37	0.50	6.52	7.49	8.80	9.77	10.75	1.20	1.37	1.10	1.77	1.10	1.97	1.25	2.46
J-2	10	10	1.32	0.63	6.52	7.49	8.80	9.77	10.75	5.40	6.20	1.10	8.01	1.10	8.90	1.25	11.12
J-3	14	14	3.46	0.33	5.73	6.60	7.77	8.65	9.55	6.65	7.65	1.10	9.92	1.10	11.04	1.25	13.85
J-3A	27	27	11.98	0.32	4.19	4.85	5.76	6.44	7.18	16.20	18.75	1.10	24.50	1.10	27.40	1.25	34.69
J-4	5	10	0.66	0.59	6.52	7.49	8.80	9.77	10.75	2.56	2.94	1.10	3.80	1.10	4.22	1.25	5.28
J-5	7	10	0.73	0.17	6.52	7.49	8.80	9.77	10.75	0.80	0.92	1.10	1.19	1.10	1.32	1.25	1.65
J-5A	32	32	9.43	0.03	3.82	4.43	5.27	5.91	6.60	0.95	1.10	1.10	1.44	1.10	1.61	1.25	2.04
J-6	18	18	13.69	0.30	5.13	5.92	6.99	7.79	8.63	21.28	24.53	1.10	31.87	1.10	35.52	1.25	44.71
J-6A	58	58	16.98	0.30	2.67	3.12	3.75	4.24	4.78	13.71	16.02	1.10	21.22	1.10	23.96	1.25	30.71
J-7	34	34	12.05	0.34	3.69	4.28	5.10	5.72	6.40	15.09	17.51	1.10	22.97	1.10	25.75	1.25	32.72
J-8	31	31	15.76	0.32	3.89	4.50	5.36	6.01	6.71	19.36	22.44	1.10	29.39	1.10	32.92	1.25	41.76
J-9	22	22	0.88	0.35	4.66	5.38	6.37	7.11	7.90	1.44	1.66	1.10	2.16	1.10	2.41	1.25	3.05

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

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REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY
ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

PROPOSED DITCH
HYDROLOGIC CALCULATIONS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		33

CULVERT HYDROLOGIC CALCULATIONS

D.A. ID	A (acres)	C	t_c (min)	I_5 (in/h)	I_{10} (in/h)	I_{25} (in/h)	I_{50} (in/h)	I_{100} (in/h)	Q_5 (cfs)	Q_{10} (cfs)	Cf_{25}	Q_{25} (cfs)	Cf_{50}	Q_{50} (cfs)	Cf_{100}	Q_{100} (cfs)
A	86.02	0.32	108	1.76	2.08	2.54	2.90	3.30	48.4	57.1	1.10	76.6	1.10	87.5	1.25	113.3
B	3.62	0.36	41	3.31	3.85	4.60	5.17	5.80	4.2	4.9	1.10	6.5	1.10	7.3	1.25	9.3
C	75.14	0.33	117	1.66	1.96	2.40	2.75	3.13	40.6	48.0	1.10	64.5	1.10	73.8	1.25	95.7
D	10.64	0.27	64	2.51	2.94	3.54	4.01	4.53	7.2	8.4	1.10	11.2	1.10	12.6	1.25	16.2
E	4.59	0.32	33	3.74	4.33	5.16	5.79	6.47	5.4	6.3	1.10	8.2	1.10	9.2	1.25	11.7
F	1.67	0.34	21	4.76	5.50	6.51	7.26	8.06	2.7	3.1	1.10	4.1	1.10	4.6	1.25	5.7
H	28.95	0.32	48	3.00	3.50	3.00	4.73	5.32	27.84	32.46	1.10	30.63	1.10	48.24	1.25	61.63
I	144.44	0.32	83	2.11	2.48	2.11	3.41	3.87	96.52	113.48	1.10	106.18	1.10	172.04	1.25	221.82
J	75.17	0.32	37	3.51	4.08	3.51	5.47	6.12	83.90	97.45	1.10	92.29	1.10	143.65	1.25	182.75

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

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REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY
ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

CULVERT
HYDROLOGIC CALCULATIONS

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		34

DITCH CHARACTERISTICS

DITCH	UPSTREAM NODE				DOWNSTREAM NODE				AVERAGE DEPTH (FT)	SHAPE	LEFT SIDE SLOPE (FT:1)	RIGHT SIDE SLOPE (FT:1)	LENGTH (FT)	SLOPE (FT/FT)	CONTRIBUTING DRAINAGE AREAS	MANNING'S N	FLOW AREA	HYDRAULIC RADIUS	DITCH CAPACITY (CFS)
	STATION	OFFSET	LT/RT	FLOWLINE ELEVATION (FT)	STATION	OFFSET	LT/RT	FLOWLINE ELEVATION (FT)											
J-1	11+51.50	20.34	LT	224.10	13+50.56	21.59	LT	222.39	1.94	V-DITCH	3	4	199.06	0.0086	J-1	0.04	13.14	0.93	43.12
J-1	13+50.56	21.59	LT	222.39	14+39.23	21.59	LT	219.58	2.55	V-DITCH	3	4	88.67	0.0317	J-1	0.04	22.85	1.23	173.34
J-1	14+39.23	21.59	LT	219.58	16+10.93	21.22	LT	217.08	2.18	V-DITCH	3	4	260.37	0.0204	J-1	0.04	16.67	1.05	91.30
J-2	11+51.50	20.7	RT	225.21	14+06.85	26.26	RT	222.43	1.47	V-DITCH	4	3	255.35	0.0109	J-2	0.04	7.54	0.71	23.12
J-2	14+06.85	26.26	RT	222.43	14+50.21	23.04	RT	221.22	2.24	V-DITCH	4	3	43.36	0.0279	J-2	0.04	17.52	1.07	114.14
J-2	14+50.21	23.04	RT	221.22	16+51.84	23.2	RT	217.44	1.52	V-DITCH	4	3	201.63	0.0187	J-2	0.04	8.06	0.73	33.17
J-2	16+51.84	23.2	RT	217.44	20+50.49	21.3	RT	212.15	1.12	V-DITCH	4	3	398.65	0.0133	J-2	0.04	4.39	0.54	12.40
J-2	20+50.49	21.3	RT	212.15	26+98.48	28.01	RT	208.09	1.66	V-DITCH	4	3	647.99	0.0063	J-2	0.04	9.62	0.80	24.27
J-3	16+10.93	21.22	LT	217.08	19+16.63	20.63	LT	213.05	1.83	V-DITCH	3	4	305.70	0.0132	J-3	0.04	11.75	0.88	46.03
J-3A	19+16.63	20.63	LT	213.05	22+93.57	24.35	LT	209.52	1.99	V-DITCH	3	4	376.94	0.0094	J3-A	0.04	13.93	0.96	48.68
J-4	27+76.76	27.91	RT	208.15	26+98.48	28.01	RT	208.09	1.82	V-DITCH	4	3	78.28	0.0008	J-4	0.04	11.59	0.87	10.90
J-4	32+45.51	24.94	RT	211.51	27+76.76	27.91	RT	208.15	0.82	V-DITCH	4	3	468.75	0.0072	J-4	0.04	2.32	0.39	3.90
J-4	34+61.37	27.78	RT	213.24	32+45.51	24.94	RT	211.51	1.01	V-DITCH	4	3	215.86	0.0080	J-4	0.04	3.57	0.49	7.31
J-5A	37+45.33	24.29	RT	217.17	34+61.37	27.62	RT	213.24	1.73	V-DITCH	4	3	283.96	0.0138	J5-A	0.04	10.44	0.83	40.29
J-5A	39+84.69	27.26	RT	219.52	37+45.33	24.29	RT	217.17	1.32	V-DITCH	4	3	239.36	0.0098	J5-A	0.04	6.14	0.64	16.71
J-5	42+56.37	23.73	RT	221.20	39+84.69	27.2	RT	219.52	0.86	V-DITCH	4	3	271.68	0.0062	J-5	0.04	2.56	0.41	4.12
J-6	22+93.57	24.35	LT	209.52	26+98.48	27.38	LT	207.59	2.45	V-DITCH	3	4	404.91	0.0048	J6	0.04	21.05	1.18	60.26
J-6A	31+42.82	26.26	LT	210.07	26+98.48	27.38	LT	207.59	1.81	V-DITCH	3	4	444.34	0.0056	J6-A	0.04	11.47	0.87	28.98
J-6A	31+95.93	26.02	LT	210.58	31+42.82	26.26	LT	210.07	1.23	V-DITCH	3	4	53.11	0.0096	J6-A	0.04	5.30	0.59	13.55
J-7	35+74.11	24.67	LT	215.41	31+95.93	26.02	LT	210.58	1.60	V-DITCH	3	4	378.18	0.0128	J7	0.04	8.93	0.77	31.41
J-8	37+85.62	25.07	LT	218.39	35+74.11	24.67	LT	215.41	1.62	V-DITCH	3	4	211.51	0.0141	J8	0.04	9.21	0.78	34.38
J-9	38+47.15	24.29	LT	219.50	37+85.62	25.07	LT	218.39	1.20	V-DITCH	3	4	61.53	0.0180	J9	0.04	5.06	0.58	17.48
J-9	41+96.60	27.41	LT	221.09	38+47.15	24.29	LT	219.5	1.50	V-DITCH	3	4	349.45	0.0046	J9	0.04	7.85	0.72	15.77
I-1	42+07.48	27.43	LT	221.17	41+96.60	27.41	LT	221.09	1.89	V-DITCH	3	4	10.88	0.0074	I1	0.04	12.50	0.91	37.33
I-1	45+17.37	25.82	LT	222.36	42+07.48	27.43	LT	221.17	1.33	V-DITCH	3	4	309.89	0.0038	I1	0.04	6.24	0.64	10.66
I-2	45+74.62	23.95	RT	221.97	42+56.37	23.73	RT	221.2	1.58	V-DITCH	4	3	318.25	0.0024	I-2	0.04	8.68	0.76	13.16
I-2	45+74.62	23.95	RT	221.97	45+94.67	24.95	RT	221.74	1.81	V-DITCH	4	3	20.05	0.0115	I-2	0.04	11.43	0.87	41.39
I-3	45+17.37	25.82	LT	222.36	51+59.77	24.74	LT	214.77	1.28	V-DITCH	3	4	642.40	0.0118	I3	0.04	5.71	0.61	16.63
I-4	45+94.67	23.43	RT	221.74	49+74.91	23.35	RT	217.64	1.80	V-DITCH	4	3	380.24	0.0108	I-4	0.04	11.31	0.86	39.54
I-4A	49+74.91	23.35	RT	217.64	52+46.11	24.13	RT	215.05	1.55	V-DITCH	4	3	271.20	0.0096	I4-A	0.04	8.44	0.75	25.16
I-4A	52+46.11	24.13	RT	215.05	55+33.03	24.66	RT	213.22	1.45	V-DITCH	4	3	286.92	0.0064	I4-A	0.04	7.38	0.70	17.21
I-5	55+33.03	24.52	RT	213.22	62+71.99	26.8	RT	210.4	1.62	V-DITCH	4	3	738.96	0.0038	I-5	0.04	9.19	0.78	17.82
I-5	65+40.96	24.37	RT	212.00	62+71.99	26.8	RT	210.4	1.21	V-DITCH	4	3	268.97	0.0059	I-5	0.04	5.17	0.58	10.32
I-5	65+40.96	24.37	RT	212.00	68+19.60	28.73	RT	209.95	1.52	V-DITCH	4	3	278.64	0.0074	I-5	0.04	8.09	0.73	20.87
I-6	51+59.77	24.74	LT	214.77	52+22.21	25.93	LT	214.39	1.68	V-DITCH	3	4	62.44	0.0061	I6	0.04	9.82	0.80	24.60
I-6	52+22.21	25.93	LT	214.39	55+41.91	23.51	LT	212.63	1.90	V-DITCH	3	4	319.70	0.0055	I6	0.04	12.60	0.91	32.65
I-7	55+41.91	23.51	LT	212.63	60+36.31	23.63	LT	210.93	1.94	V-DITCH	3	4	494.40	0.0034	I7	0.04	13.10	0.93	27.19
I-7A	60+36.31	23.63	LT	210.93	62+65.04	23.51	LT	210.14	1.87	V-DITCH	3	4	228.73	0.0035	I7-A	0.04	12.24	0.90	24.87
I-7A	62+92.47	23.52	LT	210.22	62+65.04	23.51	LT	210.14	1.91	V-DITCH	3	4	27.43	0.0029	I7-A	0.04	12.73	0.92	24.10
I-7B	66+44.94	24.88	LT	211.36	62+92.47	23.52	LT	210.22	1.41	V-DITCH	3	4	352.47	0.0032	I7-B	0.04	6.93	0.68	11.27
I-7B	66+44.94	24.88	LT	211.36	68+19.60	25.32	LT	210.6	1.40	V-DITCH	3	4	174.66	0.0044	I7-B	0.04	6.86	0.67	12.89
H-1C	68+19.60	25.32	LT	210.60	72+40.42	23.22	LT	209.27	1.60	V-DITCH	3	4	420.82	0.0032	H1-C	0.04	9.02	0.77	15.82
H-1C	72+40.42	23.22	LT	209.27	77+67.47	34.2	LT	206.56	1.42	V-DITCH	3	4	527.05	0.0051	H1-C	0.04	7.06	0.68	14.55
H-2	68+19.60	24.76	RT	209.95	79+36.12	38.37	RT	206.49	1.66	V-DITCH	4	3	1116.52	0.0031	H-2	0.04	9.70	0.80	17.28
H-2	79+36.12	38.37	RT	206.49	80+23.51	48.16	RT	201.98	2.31	V-DITCH	4	3	87.39	0.0516	H-2	0.04	18.64	1.11	168.52
H-3	77+67.47	34.2	LT	206.56	78+46.23	41.53	LT	204.31	2.59	V-DITCH	3	4	78.76	0.0286	H3	0.04	23.43	1.24	170.23
H-3	78+46.23	41.53	LT	204.31	80+34.54	48.48	LT	200.97	1.83	V-DITCH	3	4	188.31	0.0177	H3	0.04	11.66	0.88	52.81

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
6/9/2026

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SHEET 1 OF 2

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

PROPOSED DITCH CHARACTERISTICS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		35

DITCH CHARACTERISTICS

DITCH	UPSTREAM NODE				DOWNSTREAM NODE				AVERAGE DEPTH (FT)	SHAPE	LEFT SIDE SLOPE (FT:1)	RIGHT SIDE SLOPE (FT:1)	LENGTH (FT)	SLOPE (FT/FT)	CONTRIBUTING DRAINAGE AREAS	MANNING'S N	FLOW AREA	HYDRAULIC RADIUS	DITCH CAPACITY (CFS)
	STATION	OFFSET	LT/RT	FLOWLINE ELEVATION (FT)	STATION	OFFSET	LT/RT	FLOWLINE ELEVATION (FT)											
G-1	81+81.89	27.11	LT	203.08	81+41.23	28.35	LT	200.91	2.42	V-DITCH	3	4	40.66	0.0534	G-1	0.04	20.50	1.16	194.60
G-1	87+55.58	22.29	LT	203.53	81+81.89	27.11	LT	203.08	0.88	V-DITCH	3	4	573.69	0.0008	G-1	0.04	2.74	0.43	1.61
G-2	85+96.15	24.55	RT	204.90	81+46.17	31.78	RT	202.98	0.99	V-DITCH	4	3	449.98	0.0043	G-2	0.04	3.45	0.48	5.09
G-2	85+96.15	24.55	RT	204.90	86+33.90	23.9	RT	204.36	0.29	V-DITCH	4	3	37.75	0.0143	G-2	0.04	0.29	0.14	0.34
G-2	86+33.90	23.9	RT	204.36	87+63.71	22.57	RT	204.13	0.42	V-DITCH	4	3	129.81	0.0018	G-2	0.04	0.62	0.20	0.33
G-3	87+55.58	22.29	LT	203.53	89+14.48	25.77	LT	203	0.90	V-DITCH	3	4	158.90	0.0033	G-3	0.04	2.82	0.43	3.44
F-1	92+62.15	22.45	LT	206.28	89+14.48	25.77	LT	203.00	1.06	V-DITCH	3	4	347.67	0.0094	F-1	0.04	3.91	0.51	8.97
F-2	87+63.71	22.57	RT	204.13	89+14.48	25.34	RT	203.54	0.99	V-DITCH	4	3	150.77	0.0039	F-2	0.04	3.45	0.48	4.88
F-2	89+76.29	23.13	RT	203.92	89+14.48	25.34	RT	203.54	1.00	V-DITCH	4	3	61.81	0.0061	F-2	0.04	3.52	0.48	6.28
F-3	92+62.07	22.36	RT	207.27	89+76.29	23.13	RT	203.92	0.43	V-DITCH	4	3	285.78	0.0117	F-3	0.04	0.66	0.21	0.93
E-1	93+18.03	21.92	LT	207.17	92+62.15	22.45	LT	206.28	0.29	V-DITCH	3	4	55.88	0.0159	E-1	0.04	0.29	0.14	0.37
E-1	93+18.03	21.92	LT	207.17	93+96.82	23.48	LT	204.65	0.89	V-DITCH	3	4	78.79	0.0320	E-1	0.04	2.79	0.43	10.50
E-2	92+62.07	22.36	RT	207.27	93+17.81	22.73	RT	206.47	0.52	V-DITCH	4	3	55.74	0.0144	E-2	0.04	0.95	0.25	1.66
E-2	93+17.81	22.73	RT	206.47	98+49.68	24.85	RT	203.23	1.32	V-DITCH	4	3	531.87	0.0061	E-2	0.04	6.10	0.63	13.03
E-3	93+96.82	23.48	LT	204.65	94+17.53	23.19	LT	204.27	2.34	V-DITCH	3	4	20.71	0.0183	E-3	0.04	19.16	1.12	104.31
E-3	94+17.53	23.19	LT	204.27	98+69.80	23.18	LT	202.86	1.86	V-DITCH	3	4	452.27	0.0031	E-3	0.04	12.11	0.89	23.29
E-4	98+49.68	24.85	RT	203.23	98+69.80	24.78	RT	203.4	1.66	V-DITCH	4	3	20.12	-0.0084	E-4	0.04	9.64	0.80	28.30
E-4	99+84.51	24.43	RT	203.45	98+69.80	24.78	RT	203.4	1.65	V-DITCH	4	3	114.71	0.0004	E-4	0.04	9.53	0.79	6.33
E-5	100+87.99	24.46	LT	204.48	98+69.80	23.18	LT	202.86	1.11	V-DITCH	3	4	218.19	0.0074	E-5	0.04	4.33	0.53	9.11
D-1	102+18.98	26.28	LT	204.53	100+87.99	24.46	LT	204.48	0.81	V-DITCH	3	4	130.99	0.0004	D-1	0.04	2.31	0.39	0.89
D-1	102+18.98	26.28	LT	204.53	102+49.24	26.37	LT	202.89	1.13	V-DITCH	3	4	30.26	0.0542	D-1	0.04	4.43	0.54	25.37
D-1	102+65.72	21.6	LT	204.46	102+49.24	26.37	LT	202.89	1.11	V-DITCH	3	4	16.48	0.0953	D-1	0.04	4.27	0.53	32.06
D-2	100+20.74	22.94	RT	203.78	99+84.51	24.43	RT	203.45	0.96	V-DITCH	4	3	36.23	0.0091	D-2	0.04	3.21	0.46	6.76
D-2	100+20.74	22.94	RT	203.78	102+49.24	23.3	RT	202.77	2.03	V-DITCH	4	3	228.50	0.0044	D-2	0.04	14.46	0.98	35.15
D-2	104+07.74	23.88	RT	206.73	102+49.24	23.3	RT	202.77	1.29	V-DITCH	4	3	158.50	0.0250	D-2	0.04	5.85	0.62	24.95
D-3	103+19.48	20.98	LT	204.96	102+65.72	21.6	LT	204.46	0.28	V-DITCH	3	4	53.76	0.0093	D-3	0.04	0.27	0.13	0.26
D-3	104+32.21	19.99	LT	205.11	103+19.48	20.98	LT	204.96	0.11	V-DITCH	3	4	112.73	0.0013	D-3	0.04	0.04	0.05	0.01
D-3	104+32.21	19.99	LT	205.11	105+04.44	24.21	LT	204.25	0.35	V-DITCH	3	4	72.23	0.0119	D-3	0.04	0.42	0.17	0.52
C-1	105+04.44	24.21	LT	204.25	106+53.13	19.69	LT	201.73	0.89	V-DITCH	3	4	148.69	0.0169	C-1	0.04	2.74	0.43	7.47
C-1	106+83.99	19.64	LT	203.83	106+53.13	19.69	LT	201.73	0.58	V-DITCH	3	4	30.86	0.0680	C-1	0.04	1.17	0.28	4.79
C-2	104+32.09	23.09	RT	206.73	106+56.61	23.94	RT	201.58	1.55	V-DITCH	4	3	224.52	0.0229	C-2	0.04	8.41	0.74	38.83
C-3	109+24.93	23.41	LT	204.41	106+83.99	19.64	LT	203.83	0.69	V-DITCH	3	4	240.94	0.0024	C-3	0.04	1.69	0.33	1.48
C-4	107+50.35	25.4	RT	203.60	106+56.61	23.94	RT	201.58	2.76	V-DITCH	4	3	93.74	0.0215	C-4	0.04	26.57	1.32	174.80
C-4	108+86.97	25.39	RT	206.07	107+50.35	25.4	RT	203.6	1.39	V-DITCH	4	3	136.62	0.0181	C-4	0.04	6.71	0.67	25.53
C-4	109+76.80	25.35	RT	206.23	108+86.97	25.39	RT	206.07	0.29	V-DITCH	4	3	89.83	0.0018	C-4	0.04	0.29	0.14	0.12
C-4	113+86.38	25.21	RT	215.19	109+76.80	25.35	RT	206.23	1.02	V-DITCH	4	3	409.58	0.0219	C-4	0.04	3.66	0.49	12.49
C-5	112+54.81	20.49	LT	210.28	109+24.93	23.41	LT	204.41	1.55	V-DITCH	3	4	329.88	0.0178	C-5	0.04	8.38	0.74	34.05
C-6	114+00.51	24.8	RT	215.35	113+86.38	24.8	RT	215.19	3.05	V-DITCH	4	3	14.13	0.0113	C-6	0.04	32.56	1.47	166.26
C-6	117+10.85	20.97	RT	222.35	114+00.51	24.8	RT	215.35	2.00	V-DITCH	4	3	310.34	0.0226	C-6	0.04	13.93	0.96	75.54
C-6	117+10.85	20.97	RT	222.35	117+79.56	21.33	RT	222.26	1.45	V-DITCH	4	3	68.71	0.0013	C-6	0.04	7.31	0.69	7.69
C-7	112+67.80	20.07	LT	210.53	112+54.81	20.49	LT	210.28	1.93	V-DITCH	3	4	12.99	0.0192	C-7	0.04	13.00	0.93	63.65
C-7	116+60.99	23.81	LT	221.85	112+67.80	20.07	LT	210.53	1.33	V-DITCH	3	4	393.19	0.0288	C-7	0.04	6.21	0.64	29.05
B-1	116+60.99	23.81	LT	221.85	118+27.46	23.98	LT	221.03	0.92	V-DITCH	3	4	166.47	0.0049	B-1	0.04	2.96	0.44	4.47
B-2	117+79.56	21.33	RT	222.26	118+27.46	21.59	RT	221.25	2.03	V-DITCH	4	3	47.90	0.0211	B-2	0.04	14.39	0.97	76.26
B-3	122+52.34	18.4	LT	227.16	118+27.46	23.98	LT	221.03	0.50	V-DITCH	3	4	424.88	0.0144	B-3	0.04	0.88	0.24	1.50
B-4	120+54.04	22.66	RT	223.02	118+27.46	21.59	RT	221.25	2.10	V-DITCH	4	3	226.58	0.0078	B-4	0.04	15.40	1.01	50.82
B-6	121+18.04	23.17	RT	225.54	120+54.04	22.66	RT	223.02	0.81	V-DITCH	4	3	64.00	0.0394	B-6	0.04	2.27	0.39	8.85
B-6	122+50.85	23.87	RT	228.01	121+18.04	23.17	RT	225.54	0.25	V-DITCH	4	3	132.81	0.0186	B-6	0.04	0.21	0.12	0.26

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
5/29/2026

SHEET 2 OF 2

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REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY
ENGINEERING DEPARTMENT

THE STATE OF TEXAS
WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

PROPOSED DITCH CHARACTERISTICS

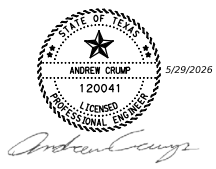
DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		36

PROPOSED DRIVEWAY CULVERT TABLE

DRIVEWAY NAME	SIZE (IN)	UPSTREAM STATION	UPSTREAM OFFSET	UPSTREAM FLOWLINE ELEVATION	DOWNSTREAM STATION	DOWNSTREAM OFFSET	DOWNSTREAM FLOWLINE ELEVATION	LENGTH (FT)	SLOPE %	PROPOSED CULVERT MATERIAL
DW 1	18	13+39.87	26.80' RT	223.34	13+61.87	26.91' RT	223.17	22	0.77%	RCP
DW 5	24	21+32.79	21.64' LT	210.83	21+56.79	21.64' LT	210.67	24	0.67%	RCP
DW 6	24	23+08.23	24.71' LT	209.40	23+30.23	25.01' LT	209.30	22	0.45%	RCP
DW 7	18	32+07.62	25.62' LT	210.70	31+86.62	25.84' LT	210.49	21	1.00%	RCP
DW 9	18	35+32.19	23.50' LT	214.76	35+11.20	23.99' LT	214.48	21	1.33%	RCP
DW 10	18	37+95.34	24.78' LT	218.56	37+74.34	25.22' LT	218.18	21	1.81%	RCP
DW 11	18	39+89.89	27.25' RT	219.55	39+71.89	27.12' RT	219.43	18	0.67%	RCP
DW 12	18	40+35.95	22.29' LT	220.39	40+13.95	22.29' LT	220.24	22	0.68%	RCP
DW 13	18	42+07.48	27.97' LT	221.17	41+86.48	27.45' LT	221.01	21	0.76%	RCP
DW 14	18	43+24.89	26.04 LT	221.37	42+98.89	25.90 LT	221.30	26	0.27%	RCP
DW 16	18	49+39.91	23.44' RT	218.01	49+65.91	23.36' RT	217.71	26	1.15%	RCP
DW 17	2-18	51+43.50	25.06' LT	214.93	51+77.49	24.33' LT	214.60	34	0.97%	RCP
DW 18	2-18	55+20.43	23.60' LT	212.71	55+54.43	23.50' LT	212.59	34	0.35%	RCP
DW 19	18	67+46.62	25.16' LT	211.01	67+68.62	25.20 LT	210.93	22	-0.36%	RCP
DW 20	18	68+04.27	25.43' LT	210.66	68+29.27	25.27' LT	210.57	25	-0.36%	RCP
DW 21	2-18	68+05.34	26.43' RT	209.99	68+37.33	25.63' RT	209.90	32	0.28%	RCP
DW 23	2-24	78+46.23	42.83 LT	204.31	78+71.14	45.79' LT	204.15	26	0.62%	RCP
DW 24	24	88+46.00	26.37' LT	203.23	88+67.94	26.28' LT	203.16	22	-0.32%	RCP
DW 25	24	93+83.53	23.67' LT	204.89	94+17.53	23.18 LT	204.27	34	1.82%	RCP
DW 26	18	100+03.33	24.04 RT	203.48	99+65.33	24.53' RT	203.42	38	0.16%	RCP
DW 29	24	109+46.55	23.65' LT	204.48	109+13.55	23.29' LT	204.43	33	0.15%	RCP
DW 30	24	112+67.80	19.97' LT	210.53	112+42.80	19.87' LT	209.97	25	2.24%	RCP

PROPOSED INTERSECTION CULVERT TABLE

INTERSECTION	SIZE (IN)	UPSTREAM STATION	UPSTREAM OFFSET	UPSTREAM FLOWLINE ELEVATION	DOWNSTREAM STATION	DOWNSTREAM OFFSET	DOWNSTREAM FLOWLINE ELEVATION	LENGTH (FT)	SLOPE %	CULVERT MATERIAL
CRAYTON RD	18	35+93.00	25.11' LT	215.67	35+58.00	24.06' LT	215.20'	35	1.34%	RCP
MOUND CREEK RD	18	42+56.37	22.83' RT	221.20	42+13.37	22.92' RT	220.75'	43	1.05%	RCP
POHL RD	2-18	51+86.21	24.10' LT	214.56	52+22.21	23.04' LT	214.39	36	0.47%	RCP



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REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY
ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
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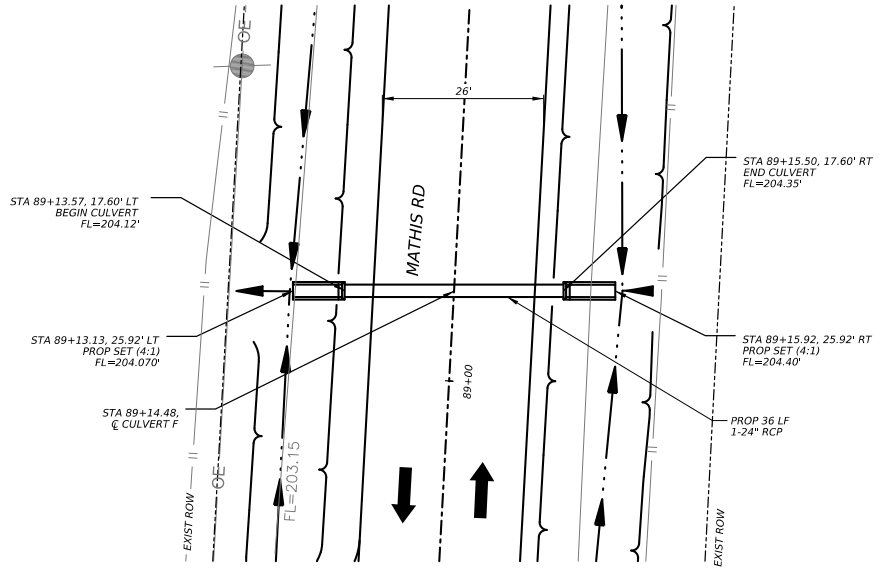
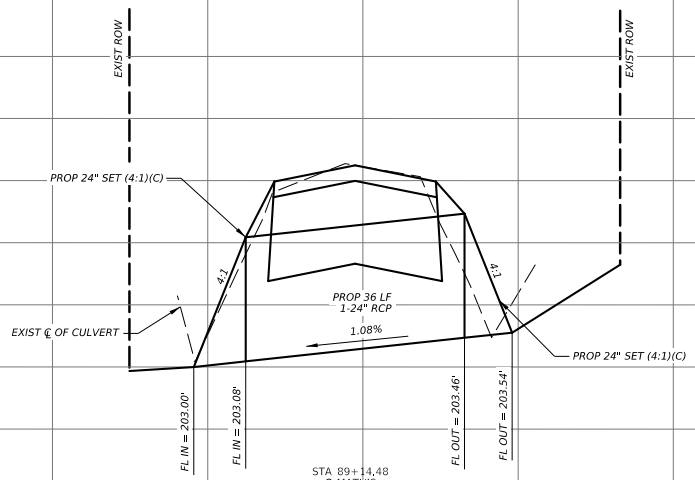
Firm No. F-11278

PROPOSED DRIVEWAY CULVERT TABLE

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		37





HYDRAULIC DATA	
25-YR DESIGN FREQUENCY	
Q (CFS)	4.10
V (FPS)	4.77
HW ELEV. (FT)	205.46
TW ELEV. (FT)	204.32
100-YR DESIGN FREQUENCY	
Q (CFS)	5.70
V (FPS)	5.16
HW ELEV. (FT)	205.69
TW ELEV. (FT)	204.36

LEGEND

OE — EXIST OVERHEAD ELECTRIC

II — EXIST FENCE

NOTES:

1. ALL PROPOSED AND REMAINING CROSS DRAINAGE STRUCTURES SHALL HAVE SAFETY END TREATMENTS INSTALLED.

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 10 20
0 1 2
SCALE IN FEET
1"=20'HORIZONTAL
1"=2' VERTICAL

SHEET 1 OF 5

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS
WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
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CULVERT F
LAYOUT
STA 89+14.48

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		38

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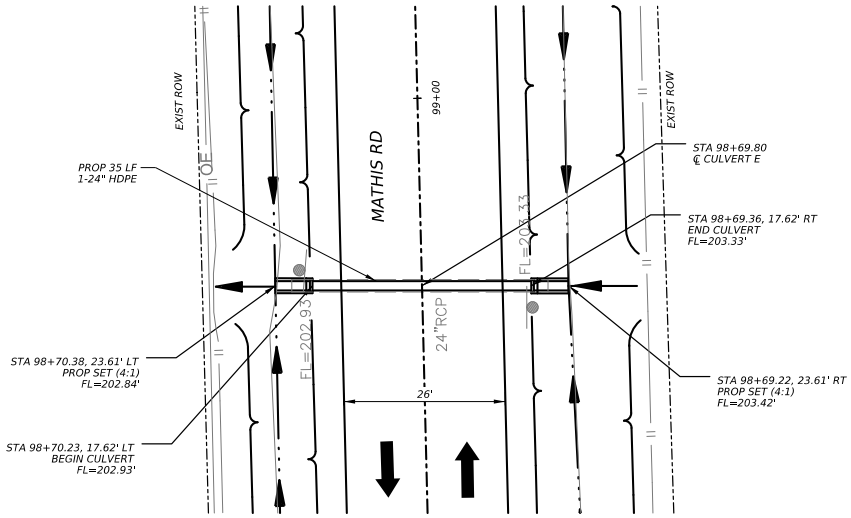


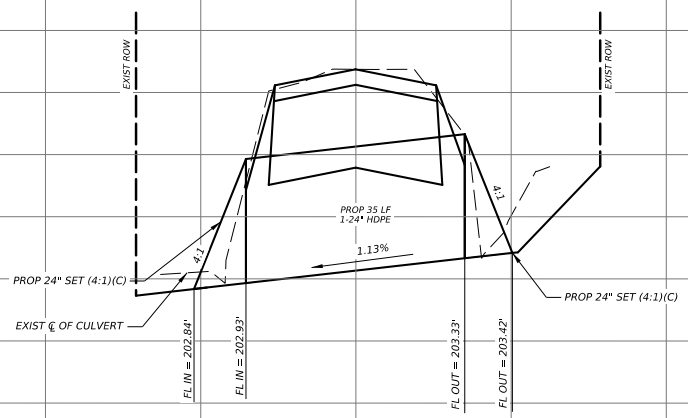
LEGEND

OE — EXIST OVERHEAD ELECTRIC

II — EXIST FENCE

NOTES:

1. ALL PROPOSED AND REMAINING CROSS DRAINAGE STRUCTURES SHALL HAVE SAFETY END TREATMENTS INSTALLED.



HYDRAULIC DATA	
25-YR DESIGN FREQUENCY	
Q (CFS)	8.20
V (FPS)	4.07
HW ELEV. (FT)	204.78
TW ELEV. (FT)	204.37
100-YR DESIGN FREQUENCY	
Q (CFS)	11.70
V (FPS)	4.12
HW ELEV. (FT)	205.11
TW ELEV. (FT)	204.63

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

0 10 20
0 1 2
SCALE IN FEET
1"=20'HORIZONTAL
1"=2' VERTICAL

SHEET 2 OF 5

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

CULVERT E
LAYOUT
STA 98+69.80

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		39

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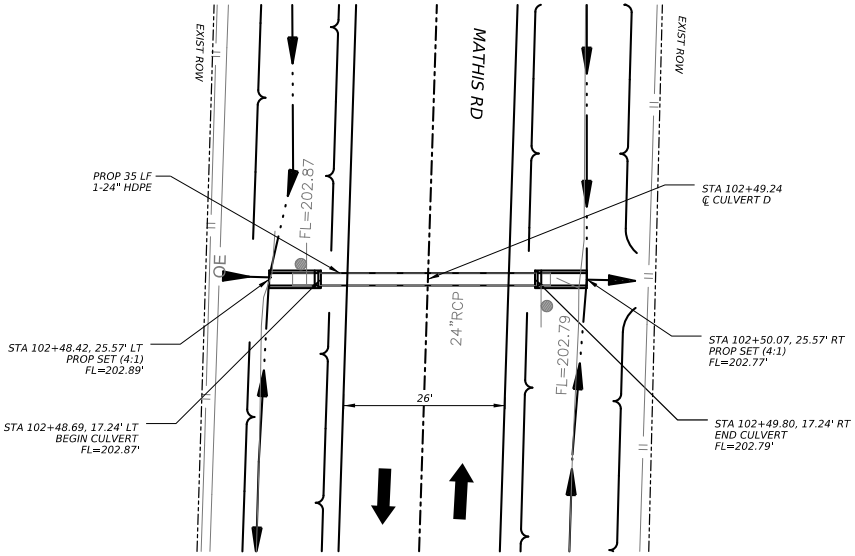
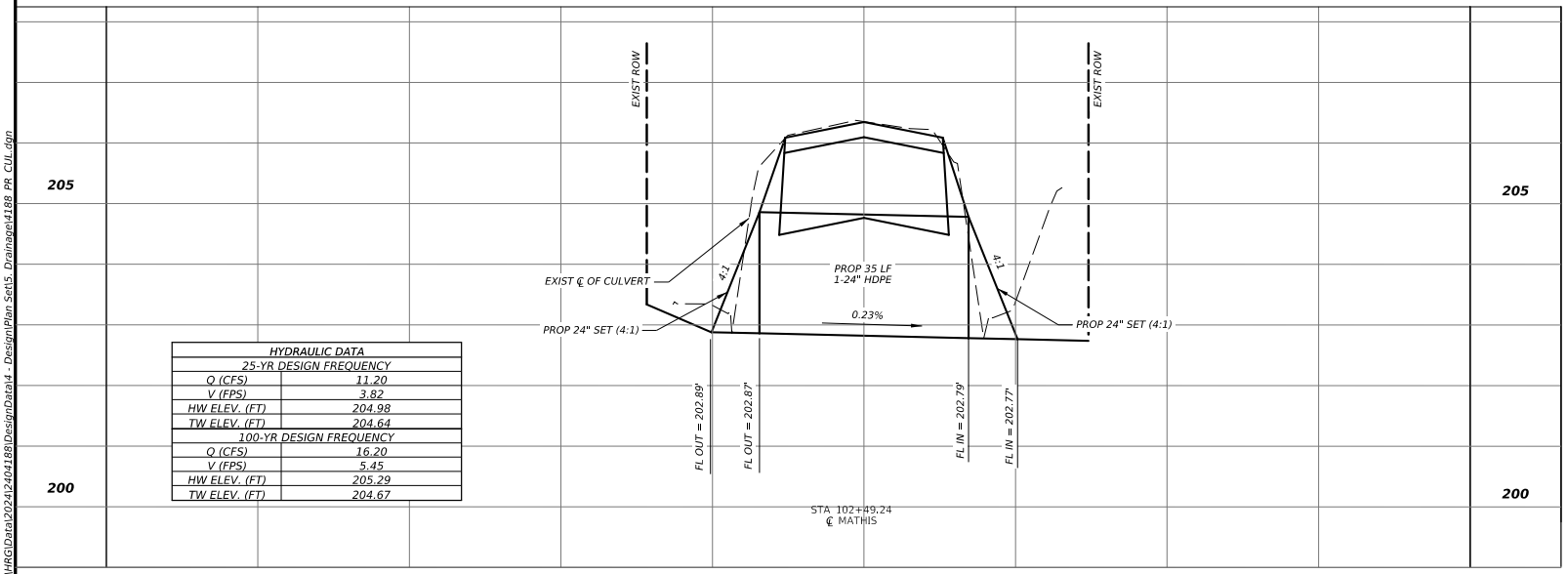


LEGEND

- OE — EXIST OVERHEAD ELECTRIC
- II — EXIST FENCE

NOTES:

1. ALL PROPOSED AND REMAINING CROSS DRAINAGE STRUCTURES SHALL HAVE SAFETY END TREATMENTS INSTALLED.



HYDRAULIC DATA	
25-YR DESIGN FREQUENCY	
Q (CFS)	11.20
V (FPS)	3.82
HW ELEV. (FT)	204.98
TW ELEV. (FT)	204.64
100-YR DESIGN FREQUENCY	
Q (CFS)	16.20
V (FPS)	5.45
HW ELEV. (FT)	205.29
TW ELEV. (FT)	204.67

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 10 20
0 1 2
SCALE IN FEET
1"=20'HORIZONTAL
1"=2' VERTICAL

SHEET 3 OF 5

DATE: 5/29/2026 10:40:40 AM
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REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS — WALLER COUNTY

PREPARED BY:
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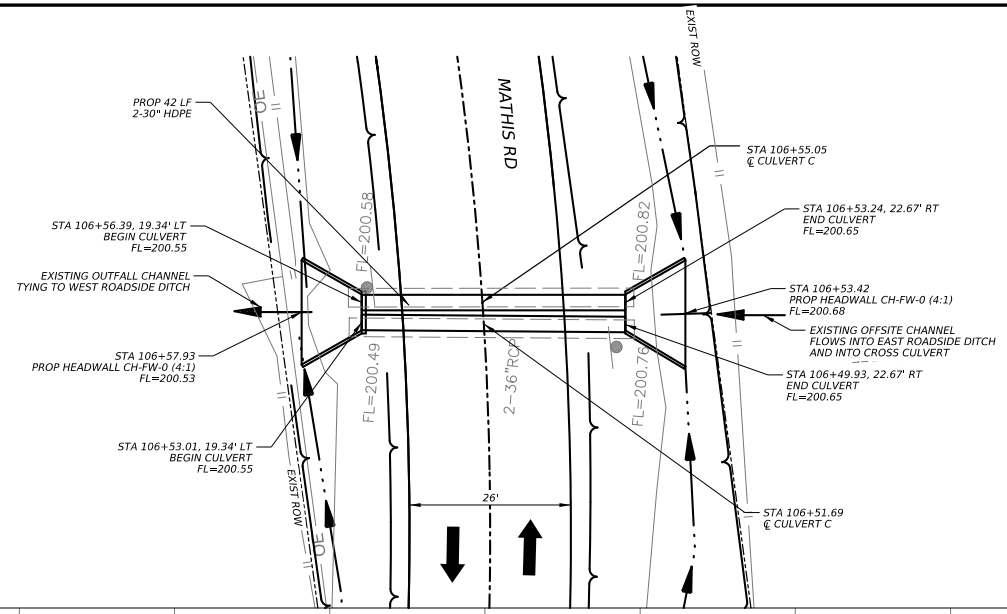
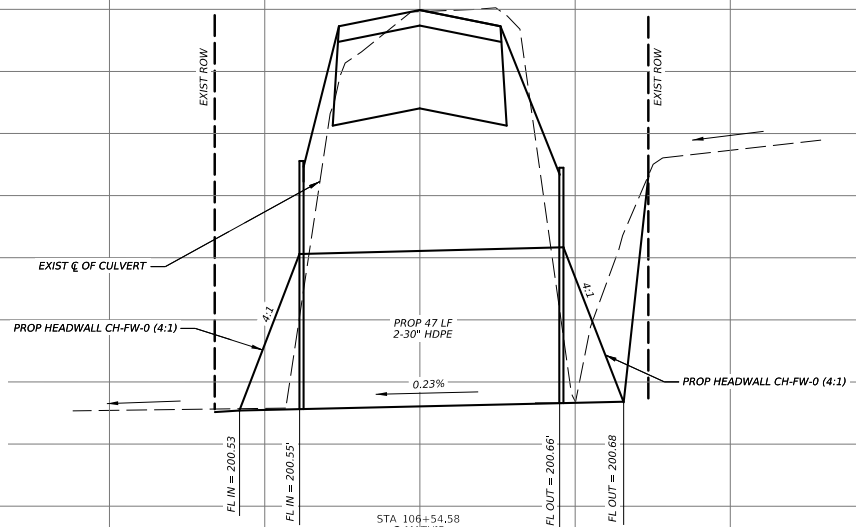
CULVERT D
LAYOUT
STA 102+49.24

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		40





HYDRAULIC DATA	
25-YR DESIGN FREQUENCY	
Q (CFS)	64.50
V (FPS)	6.13
HW ELEV. (FT)	203.60
TW ELEV. (FT)	202.97
100-YR DESIGN FREQUENCY	
Q (CFS)	95.70
V (FPS)	6.85
HW ELEV. (FT)	204.37
TW ELEV. (FT)	203.18

205

200

205

200

LEGEND

OE — EXIST OVERHEAD ELECTRIC

II — EXIST FENCE

NOTES:

1. ALL PROPOSED AND REMAINING CROSS DRAINAGE STRUCTURES SHALL HAVE SAFETY END TREATMENTS INSTALLED.

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

0 10 20
0 1 2
SCALE IN FEET
1"=20' HORIZONTAL
1"=2' VERTICAL

SHEET 4 OF 5

REV. NO.	DATE	DESCRIPTION	BY

DATE: 6/9/2026 11:35:08 AM
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WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS
WALLER COUNTY

PREPARED BY:
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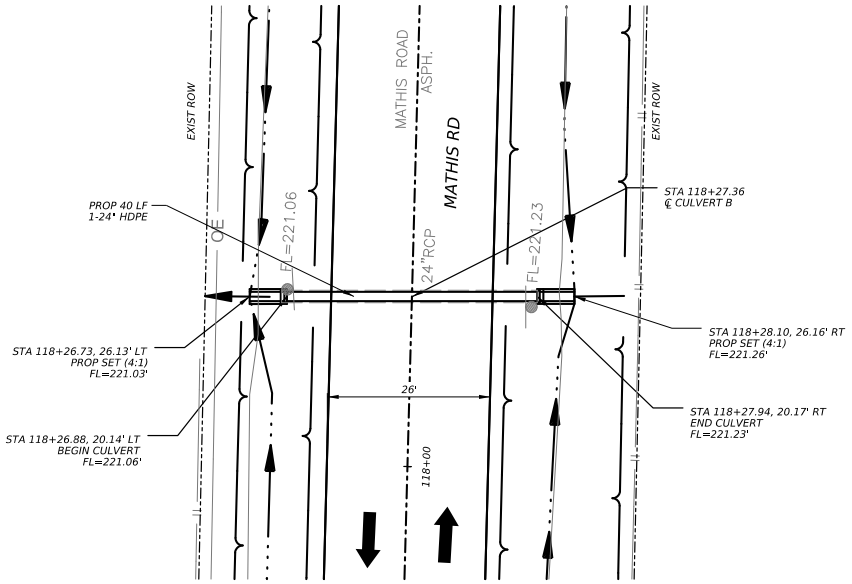
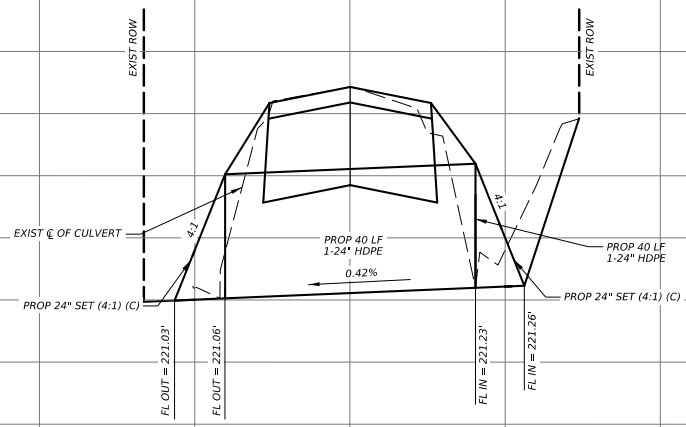
HRGreen.com
Firm No. F-11278

CULVERT C
LAYOUT
STA 106+54.58

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		41





HYDRAULIC DATA	
25-YR DESIGN FREQUENCY	
Q (CFS)	6.50
V (FPS)	4.82
HW ELEV. (FT)	222.51
TW ELEV. (FT)	221.97
100-YR DESIGN FREQUENCY	
Q (CFS)	9.30
V (FPS)	5.32
HW ELEV. (FT)	222.85
TW ELEV. (FT)	222.04

STA 118+27.46
℄ MATHIS

LEGEND

OE — EXIST OVERHEAD ELECTRIC

II — EXIST FENCE

NOTES:

1. ALL PROPOSED AND REMAINING CROSS DRAINAGE STRUCTURES SHALL HAVE SAFETY END TREATMENTS INSTALLED.

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

0 10 20
0 1 2
SCALE IN FEET
1"=20' HORIZONTAL
1"=2' VERTICAL

SHEET 5 OF 5

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS · WALLER COUNTY

PREPARED BY:
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HOUSTON, TX 77042
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HRGreen.com
Firm No. F-11278

CULVERT B
LAYOUT
STA 118+27.46

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		42

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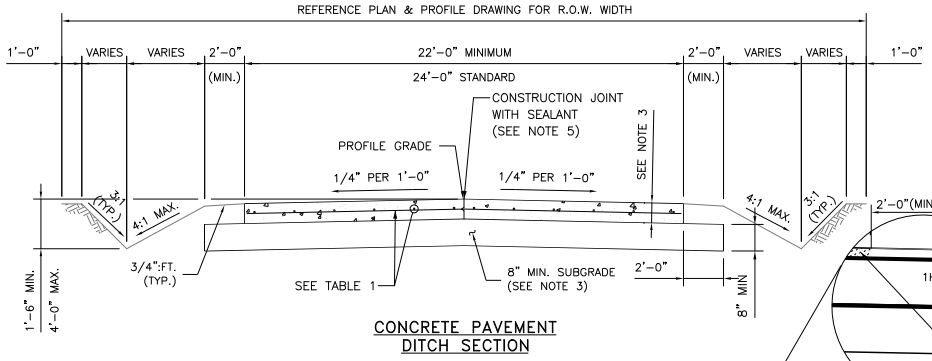
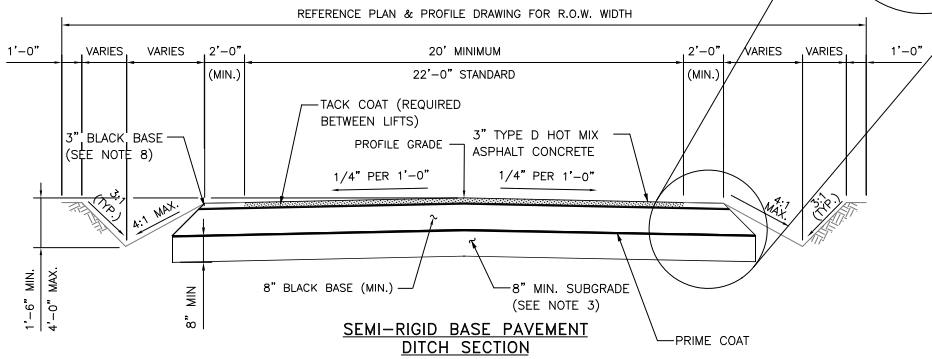
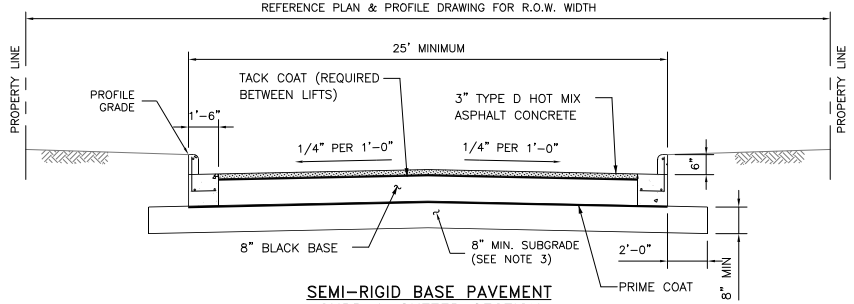
70% SUBMITTAL



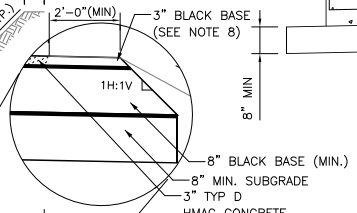
CONCRETE PAVEMENT
DITCH SECTION

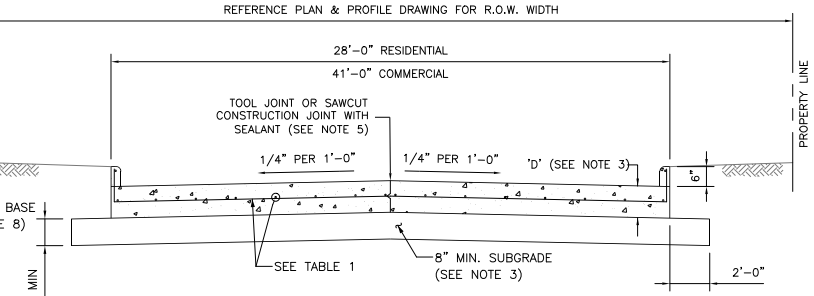


SEMI-RIGID BASE PAVEMENT
DITCH SECTION

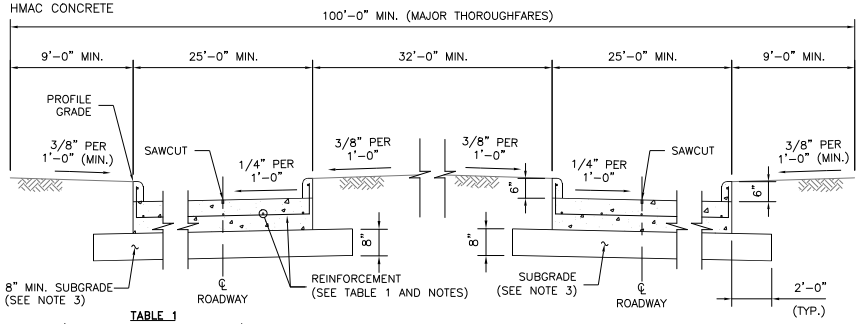


SEMI-RIGID BASE PAVEMENT
CURB & GUTTER SECTION





CONCRETE PAVEMENT
CURB & GUTTER SECTION
(PARABOLIC CROWN IS AN ACCEPTABLE OPTION)



TYPICAL SECTIONS FOR
MAJOR THOROUGHFARES

TABLE 1
(CONSTRUCTION JOINT DOWELS)

DOWEL SIZE	PAVEMENT DEPTH
#4 BAR	< 6"
#5 BAR	6" ≤ D < 9"
#6 BAR	≥ 9"
DOWEL SHALL BE DRILLED INTO EXISTING PAVEMENT (MIN. 10", MAX. 12") AND EPOXIED. (SEE HC ITEM 361.3)_	

NOTES:

1. PAVEMENT SECTIONS SHOWN ARE INTENDED FOR DEVELOPMENT PROJECTS AND NOT FOR PUBLIC PROJECTS, WHERE WIDTH OF R.O.W. MAY VARY.
2. PAVEMENT SECTIONS SHALL BE LOCATED IN CENTER OF R.O.W.
3. SUBGRADE TREATMENT AND PAVEMENT THICKNESS AS DESIGNATED IN PLANS
4. REFERENCE CONSTRUCTION JOINT DETAIL ON THE STANDARD CIVIL DRAWING "CONCRETE PAVEMENT DETAILS – SHEET 1 OF 2" FOR JOINT AND SEALANT REQUIREMENTS.
5. NO TRAFFIC ON CONCRETE PAVEMENT FOR 7 DAYS AND COMPRESSIVE STRENGTH OF 3,500 psi HAS BEEN REACHED.
6. ALL CONSTRUCTION JOINTS SHALL BE SEALED
7. MINIMUM DEPTH FOR BORES/UTILITIES SHALL BE AS FOLLOWS:
   OPEN DITCH – 3' MIN. BELOW FLOWLINE; 5' MIN. BELOW TOP OF PAVEMENT
   CURBED STREETS – 5' MIN. BELOW TOP OF PAVEMENT
8. TYPE D HOT MIX ASPHALT CONCRETE MAY BE EXTENDED TO REPLACE THE 3" BLACK BASE AT CONTRACTORS DISCRETION.

HORIZONTAL SCALE: 1"=3'-0"
VERTICAL SCALE: 1"=1'-6"

SLAB AND REBAR NOTES:

1. TYPICAL SLAB THICKNESS D=8"
2. TYPICAL REBAR SIZE AND SPACING ARE:
   a. #4 BAR @ 18" C-C LONGITUDINAL
   b. #4 BAR @ 18" C-C TRANSVERSE
3. REBAR SIZE FOR PAVEMENT LESS THAN 8" THICK
   a. #4 BAR @ 24" C-C LONGITUDINAL
   b. #4 BAR @ 24" C-C TRANSVERSE
4. REBAR SHALL NOT BE PLACED WITHIN 3" FROM THE EDGE OF PAVEMENT.
5. TYPICAL STABILIZED SUBGRADE THICKNESS IS 8 INCHES.
6. FOR HEAVY INDUSTRIAL TRAFFIC, SLAB THICKNESS AND REBAR SIZE AND SPACING WILL BE AS PER GEOTECHNICAL RECOMMENDATION.
7. ALL BENT BARS SHALL BE GRADE 40 STEEL, ALL OTHER SHALL BE GRADE 60.
8. MINIMUM LAP SPLICE 16".
9. LAP SPLICES SHOULD BE ON ALTERNATING BARS, ADJACENT LAP SPLICES ARE NOT ACCEPTABLE.

DATE: 5/29/2026 10:40:43 AM
FILE: \\hrgreen.com\hrg\Data\2024\2404188\DesignData\4 - Design\Supporting Documents\Standards - Plan Set - DGN Files\WC TYPICAL PAVEMENT SECTIONS FOR DEV PROJECTS.dgn

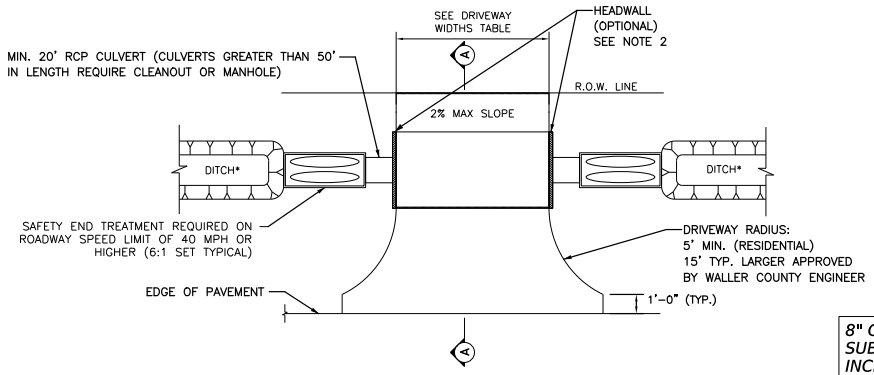
REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY
ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

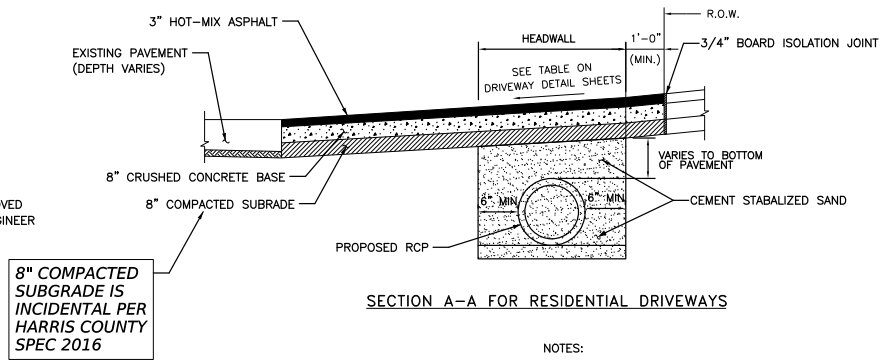
TYPICAL PAVEMENT SECTIONS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		43



OPEN DITCH DRIVEWAY

*DITCH IS TO HAVE 4:1 SLOPE



SECTION A-A FOR RESIDENTIAL DRIVEWAYS

8" COMPACTED SUBGRADE IS INCIDENTAL PER HARRIS COUNTY SPEC 2016

NOTES:

1. MAINTAIN A MIN. OF 6" BETWEEN DRIVEWAY AND CULVERT
2. HEADWALLS ARE ONLY ALLOWED ON ROADWAYS WITH POSTED SPEED LIMITS OF 35 MPH OR LESS
3. ALL DRIVEWAY CONNECTIONS SHALL HAVE THE SAME SURFACE AS THE EXISTING OR PROPOSED STREET.

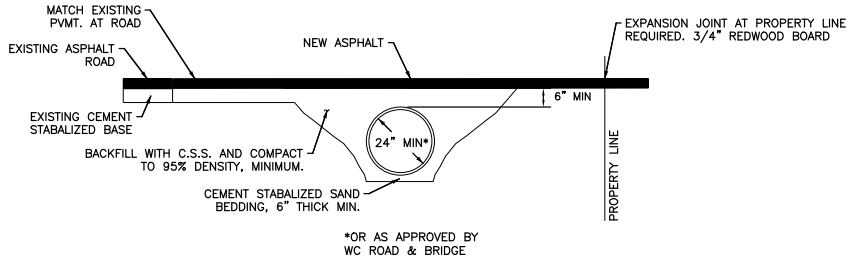
MINIMUM RADII REQUIREMENTS – DRIVEWAYS

	LOCAL	COLLECTOR	MAJOR
RESIDENTIAL	5'	5'	–
COMMERCIAL	10'	10'	25'

DRIVEWAY WIDTHS*

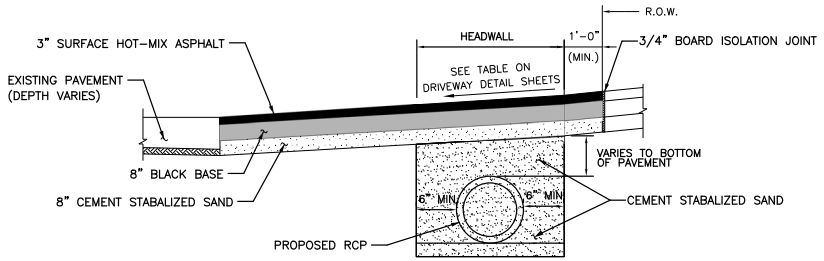
	MINIMUM	MAXIMUM
RESIDENTIAL	10'	25'
COMMERCIAL	20'	40'

***DRIVEWAY WIDTHS ARE MEASURED AT THE ROW LINE**



*OR AS APPROVED BY WC ROAD & BRIDGE

ASPHALT APRON DETAIL – DRIVEWAY PROFILE FOR CULVERT DRAINAGE



SECTION A-A FOR COMMERCIAL DRIVEWAYS

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REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
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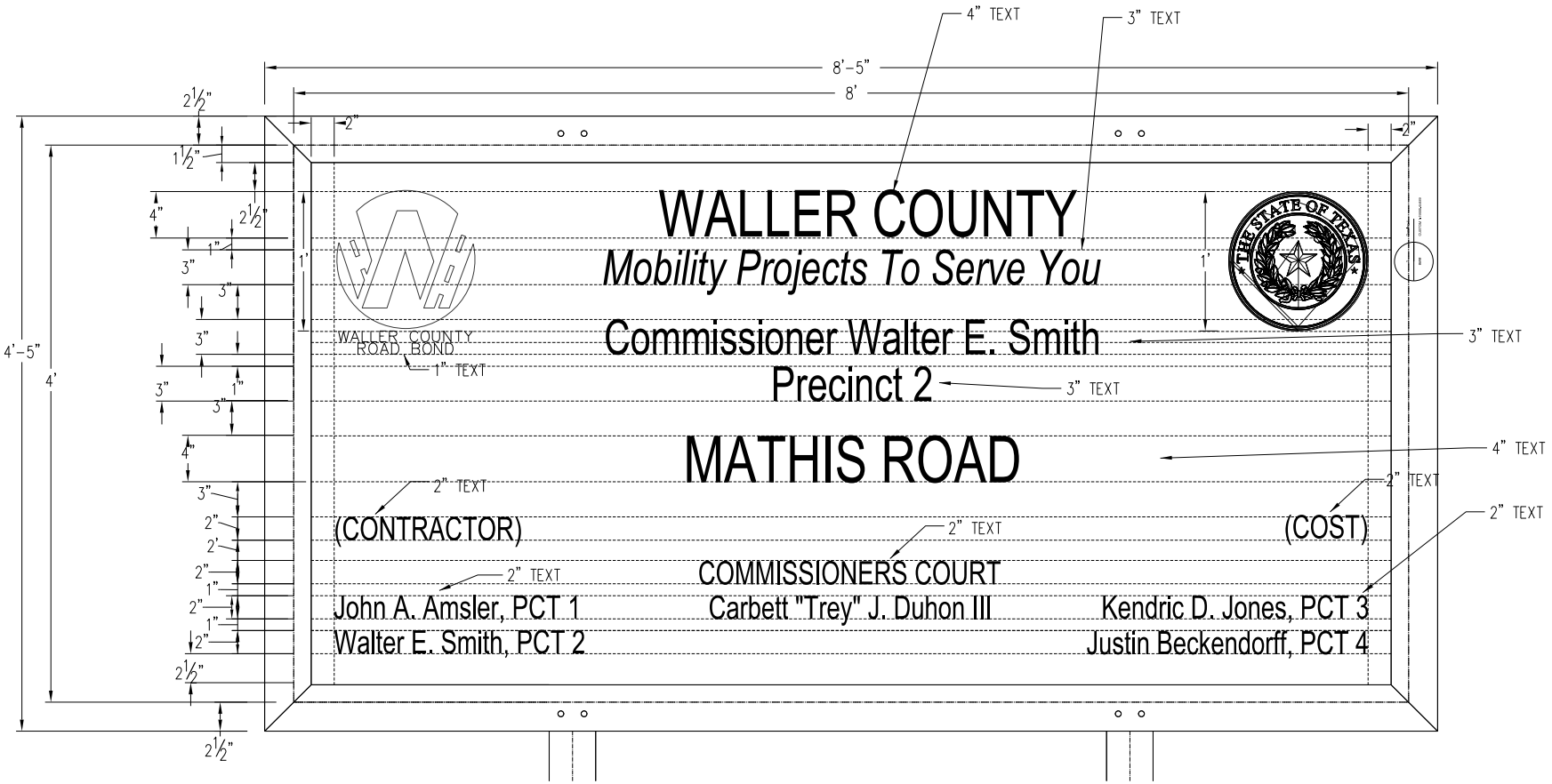
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

ASPHALT DRIVEWAY DETAILS

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		44



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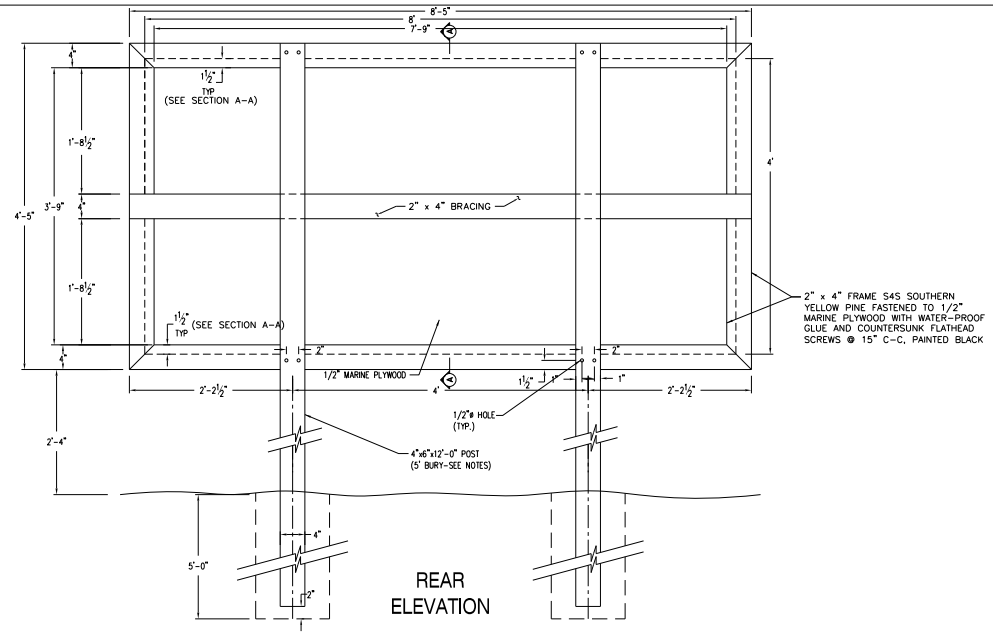
REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY
ENGINEERING DEPARTMENT

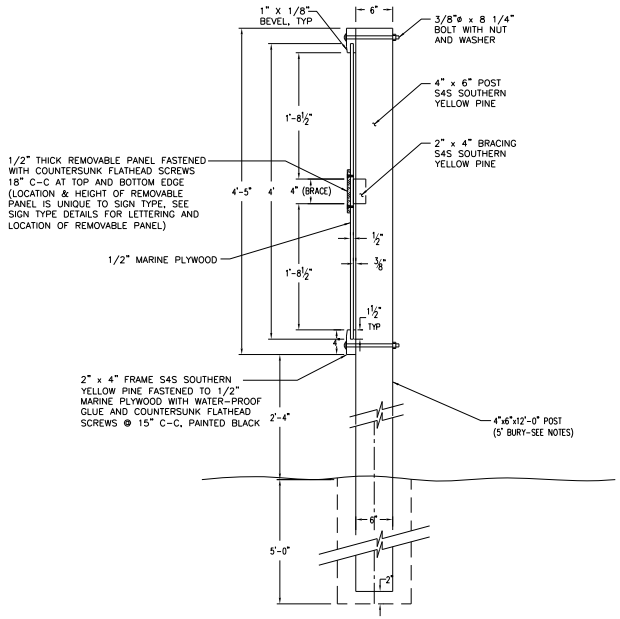
PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

COUNTY FUNDED
PROJECT SIGN DETAILS

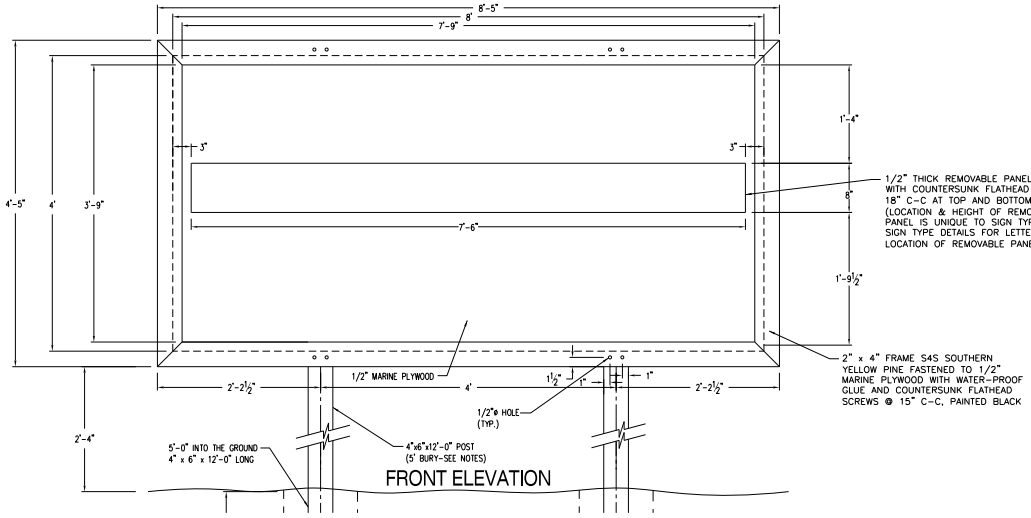
DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		45



REAR ELEVATION



SECTION A-A



FRONT ELEVATION

GENERAL NOTES:

1. THE SIGN SHALL HAVE BLACK LETTERS WITH WHITE BACKGROUND.
2. ALL LETTERING SHALL BE EITHER AERIAL FONT OR HELVETICA FONT.
3. SIGN SHALL BE MOUNTED ON 4" x 6" POSTS AND LOCATED BY THE ENGINEER.
4. REMOVABLE PANEL SHALL BE 1/2" MARINE PLYWOOD.
5. ALL BOLTS, SCREWS, NAILS, NUTS AND WASHERS SHALL BE GALVANIZED OR CADMIUM PLATED.
6. 4" x 6" POST SHALL BE WOLMANIZED OR PENTACHLOROPHENOL TREATED.
7. ALL WOOD SURFACES SHALL HAVE PRIME COAT AND TWO (2) COATS OF SHERWIN-WILLIAMS KEM-LUSTRA ENAMEL OR EQUAL.

DATE: 5/29/2026 10:40:46 AM
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REV. NO.	DATE	DESCRIPTION	BY
		ORIGINAL STANDARD ISSUED	

3-1-22 RJS

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS · WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
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(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

PROJECT SIGN DETAILS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		46

DATE:
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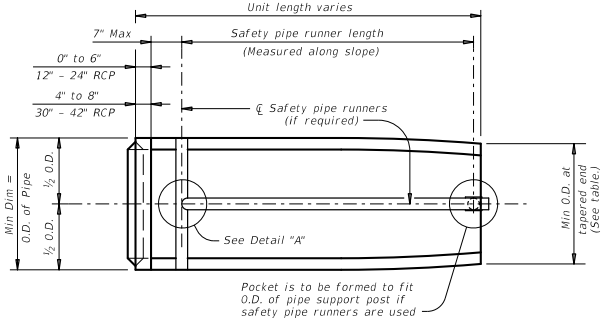


PLAN VIEW

(Showing spigot end connection.)

MAX SAFETY PIPE RUNNER LENGTHS AND REQUIRED SAFETY PIPE RUNNER SIZES

Max Safety Pipe Runner Length	Required Pipe Runner Size		
	Pipe Size	Pipe O.D.	Pipe I.D.
11' - 2"	3" STD	3.500"	3.068"
15' - 6"	3 ½" STD	4.000"	3.548"
20' - 10"	4" STD	4.500"	4.026"
35' - 4"	5" STD	5.563"	5.047"

(1) Slope as shown elsewhere in the plans. Slope of 3:1 or flatter is required for vehicle safety.

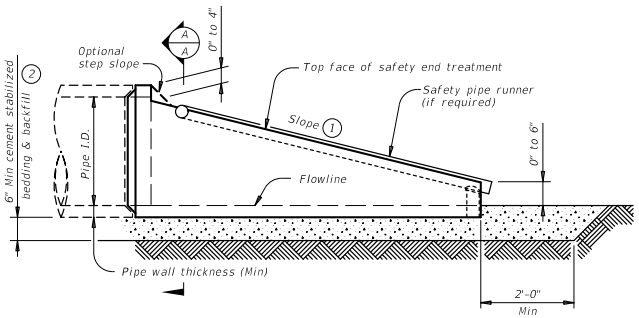
(2) Provide cement stabilized bedding and backfill in accordance with the Item, "Excavation and Backfill for Structures." Bedding and backfill is considered subsidiary to the Item "Safety End Treatment." When concrete riprap is specified around the safety end treatment, backfill as directed by Engineer.

(3) Fill the top 4" of void between precast end treatments with concrete riprap. Concrete riprap be considered subsidiary to the Item "Safety End Treatment."

(4) Adjust clear distance between pipes to provide for the minimum distance between safety end treatments.

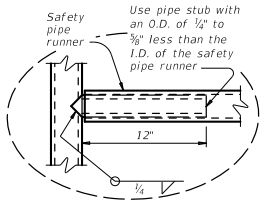
REQUIREMENTS FOR CULVERT PIPES AND SAFETY PIPE RUNNERS

Pipe I.D.	Min Wall Thickness	Min O.D.	Min O.D. at Tapered End	Min Reinf Requirements (sq. in. / ft. of pipe)	Slope	Minimum Length of Unit	Single Pipe		Multiple Pipe	
							Skew	Pipe Runners Required	Skew	Pipe Runners Required
12"	2"	16"	16"	0.07 Circ.	3:1	2' - 0"	≤ 45°	No	≤ 45°	No
					4:1	2' - 8"				
					6:1	4' - 0"				
15"	2 ¼"	19 ½"	19"	0.07 Circ.	3:1	2' - 10"	≤ 45°	No	≤ 45°	No
					4:1	3' - 9"				
					6:1	5' - 8"				
18"	2 ½"	23"	21 ½"	0.07 Circ.	3:1	3' - 8"	≤ 45°	No	≤ 45°	No
					4:1	4' - 10"				
					6:1	7' - 3"				
24"	3"	30"	27"	0.07 Circ.	3:1	5' - 3"	≤ 45°	No	≤ 30°	No
					4:1	7' - 0"			> 30°	Yes
					6:1	10' - 6"				
30"	3 ½"	37"	31"	0.18 Circ.	3:1	6' - 3"	≤ 15°	No	≤ 15°	No
					4:1	8' - 2"	> 15°	Yes	> 15°	Yes
					6:1	12' - 1"				
36"	4"	44"	36"	0.19 Ellip.	3:1	7' - 10"	= 0°	No	≥ 0°	Yes
					4:1	10' - 4"	> 0°	Yes		
					6:1	15' - 4"				
42"	4 ½"	51"	41 ½"	0.23 Ellip.	3:1	9' - 6"	≥ 0°	Yes	≥ 0°	Yes
					4:1	12' - 6"				
					6:1	18' - 7"				

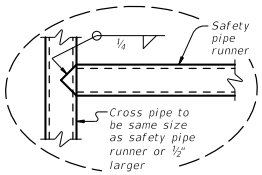


LONGITUDINAL ELEVATION

(Showing spigot end connection.)



OPTION A



OPTION B

DETAIL A

MATERIAL NOTES:

Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.

Provide safety pipe runners, cross pipes, pipe support posts, and pipe stubs meeting the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 Gr B, or API 5LX52.

Galvanize all steel components except reinforcing steel after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

GENERAL NOTES:

Precast safety end treatment for reinforced concrete pipe (CRP) may be used for TYPE II end treatment as specified in Item 467, "Safety End Treatment."

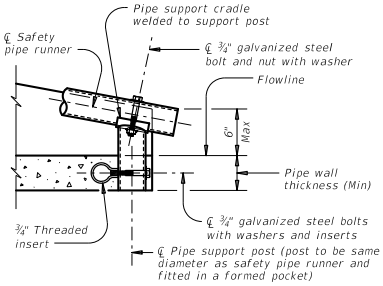
When precast safety end treatment is used as a Contractor's alternate to mitered RCP, riprap will not be required unless noted otherwise on the plans.

Manufacture precast concrete end sections in accordance with Item 464, "Reinforced Concrete Pipe" and in accordance with ASTM Specification C-76, Class III, Wall B for circular pipe.

Provide precast concrete end sections with a spigot or bell end for compatibility to upstream or downstream end conditions with sufficient annular space to allow for grout, mortar, cold applied asphalt joint compound or pre-formed plastic gasket material.

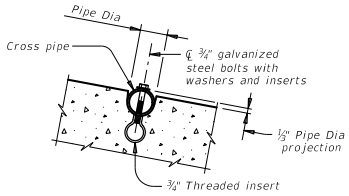
Methods of lifting shall be provided by the manufacturer for ease of loading, unloading, and installation.

Pipe runners are designed for a traversing load of 1,800 Lbs at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.



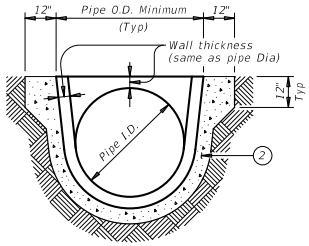
END DETAIL FOR INSTALLATION OF SAFETY PIPE RUNNERS

(If required)

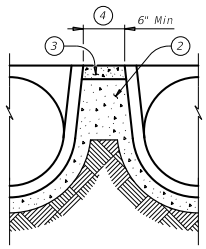


INSTALLATION DETAIL FOR SAFETY PIPE RUNNERS

(If required)



SECTION A-A



MULTIPLE PIPE INSTALLATION

Texas Department of Transportation

Bridge Division Standard

PRECAST SAFETY END TREATMENT

TYPE II ~ CROSS DRAINAGE

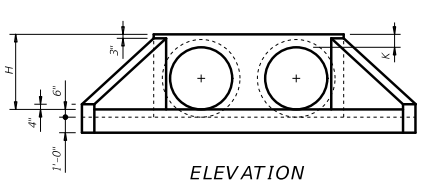
PSET-RC

FILE:	DN: RLW	CK: KLR	DW: JTR	CK: GAF
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.
				47

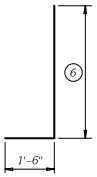
DATE:
FILE:

TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL (5)

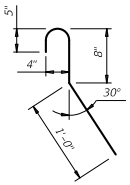
Slope	Dia of Pipe (D)	Values for One Pipe						Values to be Added for Each Addt'l Pipe		
		W	X	Y	L	Reinf (Lbs)	Conc (CY) (1)	X and W	Reinf (Lbs)	Conc (CY) (1)
2:1	12"	4' – 7 ½"	2' – 6"	2' – 10"	3' – 3 ¼"	88	0.6	1' – 9"	20	0.2
	15"	5' – 5 ¾"	2' – 9 ½"	3' – 4"	3' – 10 ¼"	103	0.7	2' – 2"	24	0.3
	18"	6' – 4 ¼"	3' – 1"	3' – 10"	4' – 5"	124	0.9	2' – 8"	32	0.3
	21"	7' – 2 ¾"	3' – 4 ½"	4' – 4"	5' – 0"	143	1.1	3' – 1"	43	0.4
	24"	8' – 2 ½"	3' – 9 ½"	4' – 10"	5' – 7"	164	1.3	3' – 7"	50	0.5
	27"	9' – 1"	4' – 1"	5' – 4"	6' – 2"	179	1.5	3' – 11"	56	0.6
	30"	9' – 11 ½"	4' – 4 ½"	5' – 10"	6' – 8 ¾"	203	1.7	4' – 4"	65	0.8
	33"	10' – 10"	4' – 8"	6' – 4"	7' – 3 ¾"	224	2.0	4' – 8"	71	0.9
	36"	11' – 8 ¼"	4' – 11 ½"	6' – 10"	7' – 10 ¾"	249	2.2	5' – 1"	81	1.0
	42"	13' – 5 ¼"	5' – 6 ½"	7' – 10"	9' – 0 ½"	298	2.8	5' – 10"	97	1.3
	48"	15' – 9"	6' – 1 ½"	9' – 4"	10' – 9 ¼"	360	3.8	6' – 7"	117	1.7
	54"	17' – 5 ¾"	6' – 8 ½"	10' – 4"	11' – 11 ¼"	427	4.5	7' – 6"	151	2.1
	60"	19' – 2 ¾"	7' – 3 ½"	11' – 4"	13' – 1"	481	5.3	8' – 3"	174	2.5
	66"	20' – 11 ½"	7' – 10 ½"	12' – 4"	14' – 3"	544	6.2	8' – 9"	194	2.9
	72"	22' – 8 ½"	8' – 5 ½"	13' – 4"	15' – 4 ¾"	601	7.1	9' – 4"	213	3.3
3:1	12"	6' – 3"	2' – 6"	4' – 3"	4' – 11"	118	0.8	1' – 9"	22	0.2
	15"	7' – 5"	2' – 9 ½"	5' – 0"	5' – 9 ¼"	137	1.1	2' – 2"	28	0.3
	18"	8' – 6 ¾"	3' – 1"	5' – 9"	6' – 7 ¾"	170	1.3	2' – 8"	37	0.5
	21"	9' – 8 ¾"	3' – 4 ½"	6' – 6"	7' – 6"	195	1.6	3' – 1"	48	0.6
	24"	11' – 0"	3' – 9 ½"	7' – 3"	8' – 4 ½"	227	2.0	3' – 7"	58	0.7
	27"	12' – 2"	4' – 1"	8' – 0"	9' – 2 ¾"	251	2.3	3' – 11"	67	0.8
	30"	13' – 4"	4' – 4 ½"	8' – 9"	10' – 1 ¼"	293	2.7	4' – 4"	77	1.0
	33"	14' – 5 ¾"	4' – 8"	9' – 6"	10' – 11 ¾"	318	3.1	4' – 8"	84	1.2
	36"	15' – 7 ¾"	4' – 11 ½"	10' – 3"	11' – 10"	351	3.5	5' – 1"	96	1.4
	42"	17' – 11 ½"	5' – 6 ½"	11' – 9"	13' – 6 ¾"	432	4.5	5' – 10"	119	1.7
	48"	21' – 1 ¾"	6' – 1 ½"	14' – 0"	16' – 2"	537	6.1	6' – 7"	146	2.3
	54"	23' – 5 ½"	6' – 8 ½"	15' – 6"	17' – 10 ¾"	630	7.3	7' – 6"	186	2.9
	60"	25' – 9 ¼"	7' – 3 ½"	17' – 0"	19' – 7 ½"	719	8.7	8' – 3"	219	3.4
	66"	28' – 1"	7' – 10 ½"	18' – 6"	21' – 4 ¼"	811	10.1	8' – 9"	242	3.9
	72"	30' – 4 ¾"	8' – 5 ½"	20' – 0"	23' – 1 ¼"	924	11.7	9' – 4"	272	4.4
4:1	12"	7' – 10 ¾"	2' – 6"	5' – 8"	6' – 6 ½"	148	1.1	1' – 9"	24	0.3
	15"	9' – 4"	2' – 9 ½"	6' – 8"	7' – 8 ½"	181	1.5	2' – 2"	32	0.4
	18"	10' – 9 ½"	3' – 1"	7' – 8"	8' – 10 ¼"	221	1.9	2' – 8"	42	0.5
	21"	12' – 2 ¾"	3' – 4 ½"	8' – 8"	10' – 0"	260	2.3	3' – 1"	57	0.7
	24"	13' – 9 ½"	3' – 9 ½"	9' – 8"	11' – 2"	301	2.8	3' – 7"	67	0.9
	27"	15' – 3"	4' – 1"	10' – 8"	12' – 3 ¾"	334	3.3	3' – 11"	77	1.0
	30"	16' – 8 ¼"	4' – 4 ½"	11' – 8"	13' – 5 ¾"	385	3.8	4' – 4"	89	1.3
	33"	18' – 1 ¾"	4' – 8"	12' – 8"	14' – 7 ½"	425	4.5	4' – 8"	101	1.4
	36"	19' – 7"	4' – 11 ½"	13' – 8"	15' – 9 ¼"	472	5.1	5' – 1"	115	1.7
	42"	22' – 5 ¾"	5' – 6 ½"	15' – 8"	18' – 1"	583	6.5	5' – 10"	141	2.1
	48"	26' – 6 ¼"	6' – 1 ½"	18' – 8"	21' – 6 ¾"	730	8.9	6' – 7"	175	2.8
	54"	29' – 5"	6' – 8 ½"	20' – 8"	23' – 10 ¼"	875	10.7	7' – 6"	226	3.6
	60"	32' – 3 ¾"	7' – 3 ½"	22' – 8"	26' – 2"	996	12.7	8' – 3"	264	4.3
	66"	35' – 2 ½"	7' – 10 ½"	24' – 8"	28' – 5 ¾"	1,140	14.9	8' – 9"	300	4.9
	72"	38' – 1 ½"	8' – 5 ½"	26' – 8"	30' – 9 ½"	1,297	17.3	9' – 4"	334	5.6
6:1	12"	11' – 2"	2' – 6"	8' – 6"	9' – 9 ¾"	224	1.9	1' – 9"	28	0.4
	15"	13' – 2 ¼"	2' – 9 ½"	10' – 0"	11' – 6 ½"	268	2.5	2' – 2"	37	0.5
	18"	15' – 2 ½"	3' – 1"	11' – 6"	13' – 3 ½"	330	3.2	2' – 8"	50	0.7
	21"	17' – 2 ¾"	3' – 4 ½"	13' – 0"	15' – 0 ½"	387	3.9	3' – 1"	69	0.9
	24"	19' – 4 ½"	3' – 9 ½"	14' – 6"	16' – 9"	453	4.8	3' – 7"	80	1.2
	27"	21' – 4 ¾"	4' – 1"	16' – 0"	18' – 5 ¾"	512	5.7	3' – 11"	96	1.4
	30"	23' – 5 ¼"	4' – 4 ½"	17' – 6"	20' – 2 ½"	593	6.7	4' – 4"	110	1.7
	33"	25' – 5 ½"	4' – 8"	19' – 0"	21' – 11 ¼"	675	7.8	4' – 8"	127	2.0
	36"	27' – 5 ¾"	4' – 11 ½"	20' – 6"	23' – 8"	735	9.0	5' – 1"	144	2.3
	42"	31' – 6 ¼"	5' – 6 ½"	23' – 6"	27' – 1 ½"	922	11.5	5' – 10"	179	3.0
	48"	37' – 3 ½"	6' – 1 ½"	28' – 0"	32' – 4"	1,191	15.9	6' – 7"	231	4.0
	54"	41' – 4 ½"	6' – 8 ½"	31' – 0"	35' – 9 ½"	1,424	19.2	7' – 6"	300	5.0
	60"	45' – 4 ¾"	7' – 3 ½"	34' – 0"	39' – 3"	1,631	22.9	8' – 3"	353	6.0



ELEVATION
(Showing dimensions.)



BARS V



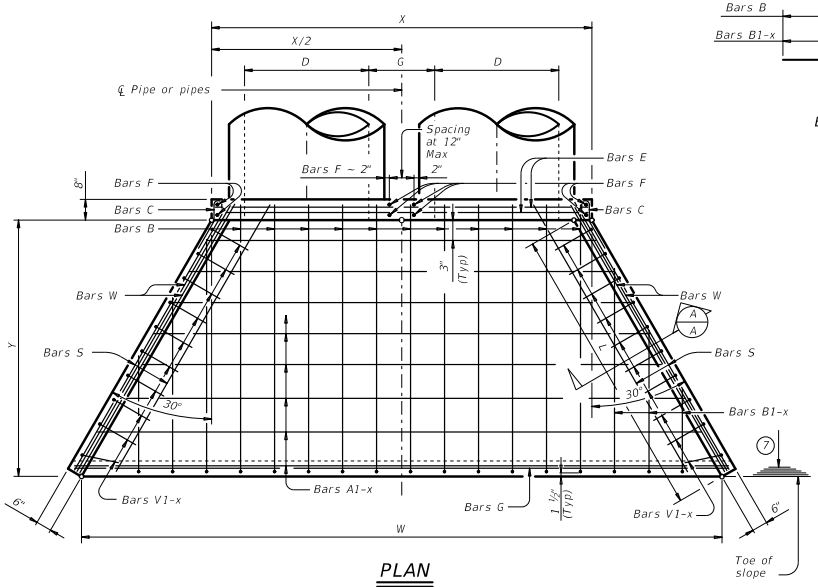
BARS CL
(Length = 2'-5")

TABLE OF (5) REINFORCING STEEL

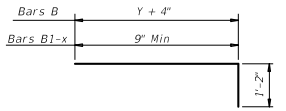
Bar	Size	Spa	No.
A	#4	1' – 0"	~
B	#3	1' – 6"	~
C	#4	1' – 0"	~
D	#3	1' – 0"	~
E	#5	~	4
F	#5	~	~
G	#3	~	2
S	#4	~	6
V	#4	1' – 0"	~
W	#5	~	4

TABLE OF CONSTANT DIMENSIONS

Dia of Pipe (D)	G	K (4)	H
12"	0' – 9"	1' – 0"	2' – 0"
15"	0' – 11"	1' – 0"	2' – 3"
18"	1' – 2"	1' – 0"	2' – 6"
21"	1' – 4"	1' – 0"	2' – 9"
24"	1' – 7"	1' – 0"	3' – 0"
27"	1' – 8"	1' – 0"	3' – 3"
30"	1' – 10"	1' – 0"	3' – 6"
33"	1' – 11"	1' – 0"	3' – 9"
36"	2' – 1"	1' – 0"	4' – 0"
42"	2' – 4"	1' – 0"	4' – 6"
48"	2' – 7"	1' – 3"	5' – 3"
54"	3' – 0"	1' – 3"	5' – 9"
60"	3' – 3"	1' – 3"	6' – 3"
66"	3' – 3"	1' – 3"	6' – 9"
72"	3' – 4"	1' – 3"	7' – 3"



PLAN



BARS B and B1-x

(1) Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.

(2) For vehicle safety, construct curbs no more than 3" above finished grade. Reduce curb heights, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

(3) Provide a 1'-0" footing as shown where required to maintain 4" minimum cover for pipes.

(4) Dimensions shown are usual and maximum.

(5) Quantities shown are for one structure end only (one headwall).

(6) Min Length = $6" + 3" \times \left(\frac{12 \times H - 7}{12 \times L}\right)$

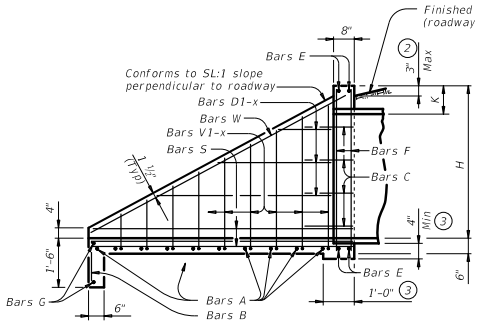
Max Length = $12 \times H - 3" \times \left(\frac{12 \times H - 7}{12 \times L}\right) - 1"$

(7) Lengths of wings based on SL:1 slope along this line.

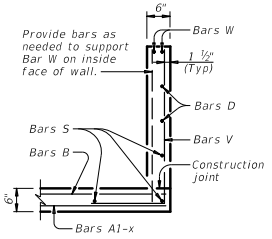
MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide Class C concrete (f'c = 3,600 psi).

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
Do not mount bridge rails of any type directly to these culvert headwalls.
This standard may not be used for wall heights, H, exceeding the values shown.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.



TYPICAL WING ELEVATION



SECTION A-A

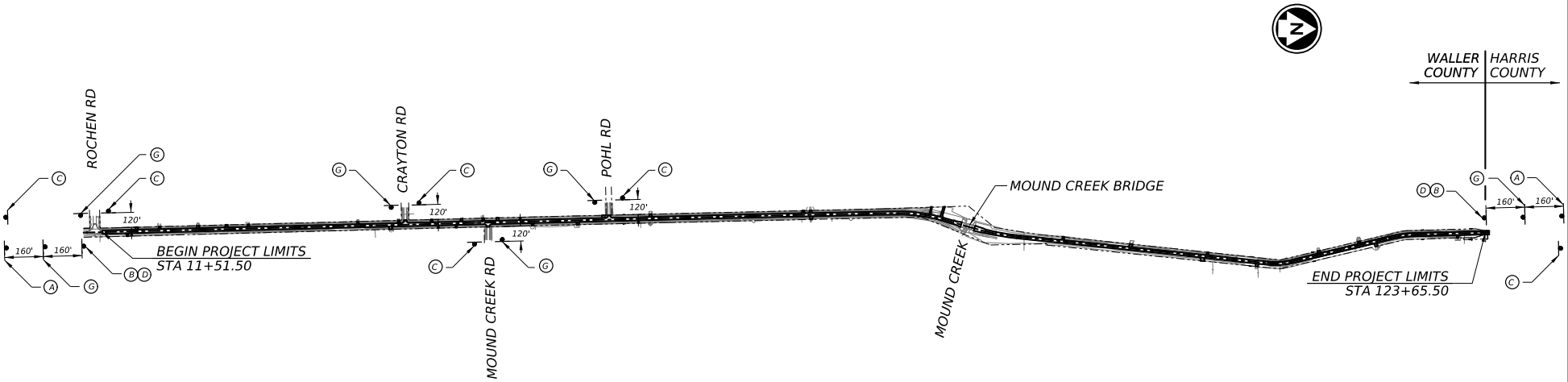
Texas Department of Transportation

Bridge Division Standard

CONCRETE HEADWALLS
WITH FLARED WINGS FOR 0° SKEW PIPE CULVERTS

CH-FW-0

FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.
				48



SIGNS

- (A) OBEY WARNING SIGNS / STATE LAW — R20-3T (48x48)
- (B) BEGIN / ROAD WORK NEXT 1.1 MILES — G20-5T (48x24)
- (C) END ROAD WORK — G20-2 (48x24)
- (D) NAME ADDRESS CITY STATE / CONTRACTOR — G20-6 (48X30)
- (E) ROAD WORK ← NEXT 1.1 MILES — G20-1bL (72X24)
- (F) ROAD WORK NEXT 1.1 MILES → — G20-1bR (72X24)
- (G) ROAD WORK AHEAD — CW20-1D (48X48)

EXISTING POSTED SPEED LIMIT 45 MPH
CONSTRUCTION ZONE DESIGN SPEED LIMIT 35 MPH

NOTES:

1. *BARRICADES SHALL BE USED AT AREAS WHERE ROAD IS TO BE CLOSED.*
2. *CONSULT STANDARDS BC(1)-21 THROUGH BC(12)-21 FOR GUIDANCE IN PLACING ADVANCE WARNING SIGNS.*
3. *ALL SIGNS, BARRICADES, AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE TEXAS MUTCD AND BARRICADE AND CONSTRUCTION (BC) STANDARDS.*
4. *ADDITIONAL SIGNS, BARRICADES, AND TRAFFIC CONTROL DEVICES OTHER THAN THOSE SHOWN MAY BE REQUIRED FOR SAFE AND FREE MOVEMENT OF TRAFFIC. PAYMENT FOR ALL SUCH DEVICES WILL BE CONSIDERED SUBSIDIARY TO THE ITEM "BARRICADES, SIGNS, AND TRAFFIC HANDLING." THIS INCLUDES TEMPORARY DRIVEWAY SIGNING.*
5. *LOCATION OF SIGNS SHALL BE PLACED AS DIRECTED BY THE ENGINEER.*
6. *PORTABLE MESSAGE SIGNS TO BE PLACED AT MINIMUM OF ONE WEEK PRIOR TO ROAD CLOSURE OR DETOURS.*

CONSTRUCTION ZONE DESIGN SPEED = 35 MPH

TYPICAL TRANSITION LENGTHS AND SUGGESTED MAXIMUM SPACING OF DEVICES

Posted Speed *	Formula	Minimum Desirable Taper Lengths "L" * * 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

MATHIS RD

* Conventional Roods Only

Taper lengths have been rounded off.

L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

LEGEND

- CONSTRUCTION AREA
- OPEN TO TRAFFIC
- HEAVY WORK VEHICLE
- FLASHING ARROW BOARD (OPTIONAL)
- SIGN POST
- TUBULAR MARKERS, CONES OR DRUMS
- FLAGGER

X = SIGN SPACING

L = TAPER LENGTH

STATE OF TEXAS — ANDREW CRUMP — 120041 — LICENSED PROFESSIONAL ENGINEER — 5/29/2026

0 400 800

SCALE IN FEET
1"=800' HORIZONTAL

REV. NO.	DATE	DESCRIPTION	BY

DATE: 5/29/2026 10:42:14 AM
FILE: \\hrgreen.com\HRGData\2024\240418\DesignData\4 - Design\Plan Set\2. TCP\4188 TCP ADV SIGN LAYOUT.dgn

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD ADVANCE WARNING SIGN LAYOUT

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		49

TRAFFIC CONTROL SEQUENCE OF WORK

PHASE 1

A. INSTALL CONSTRUCTION BARRICADES AS PER STANDARDS.

B. INSTALL SWPPP

C. MANTAIN TWO-LANE, TWO-WAY TRAFFIC ON EXISTING PAVEMENT.

D. CONSTRUCT TEMPORARY PAVEMENT ON SOUTHBOUND LANE TO SUPPORT TRAFFIC SHIFT.

PHASE 2 STEP 1

A. PLACE PORTABLE CHANNELIZING DEVICES (DRUMS) ON CENTERLINE AND CONSTRUCT TAPERS/BUFFER SPACES PER TXDOT STANDARD TCP(1-7B)-26.

B. INSTALL PORTABLE TRAFFIC SIGNAL SYSTEM AND ALL REGULATORY/WARNING SIGNING PER TXDOT STANDARD TCP(1-7B)-26 AND RDTS-25.

C. CONSTRUCT NORTHBOUND LANE WHILE MANTAINING ONE-LANE TWO-WAY TRAFFIC CONTROL USING FLAGGING AND ESCORT VEHICLE FOR A MAXIMUM OF ONE MILE IN LENGTH.

PHASE 2 STEP 2

A. MODIFY CHANNELIZATION DEVICES AS REQUIRED TO SHIFT TRAFFIC ONTO THE LANE CONSTRUCTED IN STEP 1.

B. CONSTRUCT SOUTHBOUND LANE WHILE MANTAINING ONE-LANE TWO-WAY TRAFFIC CONTROL USING FLAGGING AND ESCORT VEHICLE FOR A MAXIMUM OF ONE MILE IN LENGTH.

FINAL STEP

A. INSTALL PERMANENT SIGNING AND STRIPING AS SHOWN ON THE PLANS.

B. PERFORM FINAL PROJECT CLEANUP. REMOVE AL SWPPP DEVICES NO LONGER NEEDED AND REMOVE ALL TCP DEVICES AND TEMPORARY SIGNS.

NOTES:

CONTRACTOR SHALL MANTAIN DRIVEWAY ACCESS DURING CONSTRUCTION IN ACCORDANCE WITH STANDARD RDTS-25.

TEMPORARY PAVEMENT MUST BE CONSTRUCTED AND STABILIZED PRIOR TO CARRYING TRAFFIC.

FLAGGING AND ESCORT OPERATIONS ARE RESTRICTED TO WORKING HOURS ONLY; ROADWAY MUST BE RESTORED SO ALL LANES ARE OPEN DURING NON-WORKING HOURS.

CHANGES TO PROPOSED SEQUENCE OF WORK ARE ALLOWED AS APPROVED BY THE ENGINEER.

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

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REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY
ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

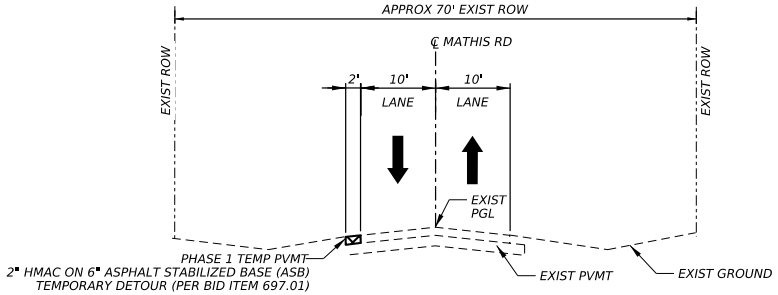
MATHIS ROAD
TRAFFIC CONTROL
SEQUENCE OF WORK

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		50

PERMANENT PAVEMENT CONSTRUCTION

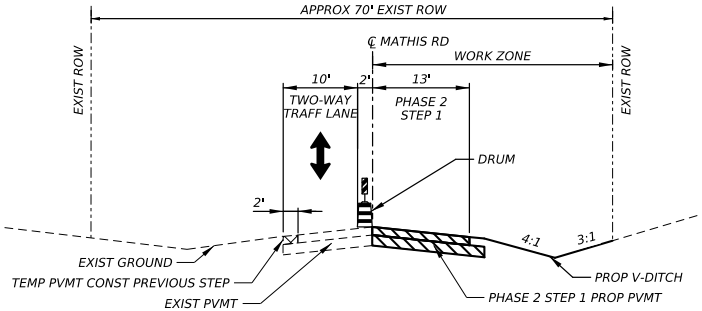
PERMANENT PAVEMENT BUILT PREVIOUS PHASE

TEMPORARY PAVEMENT CONSTRUCTION



PHASE 1 TYPICAL SECTION - TEMPORARY LANE CONSTRUCTION

STA 11+51.50 TO STA 123+65.50
N.T.S.



PHASE 2 STEP 1 TYPICAL SECTION - NORTHBOUND LANE CONSTRUCTION

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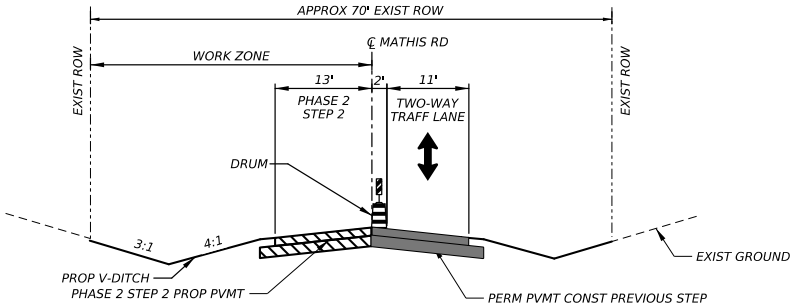

PHASE 2 STEP 2 TYPICAL SECTION - SOUTHBOUND LANE CONSTRUCTION

STA 11+51.50 TO STA 123+65.50
N.T.S.

DATE: 5/29/2026 10:42:16 AM
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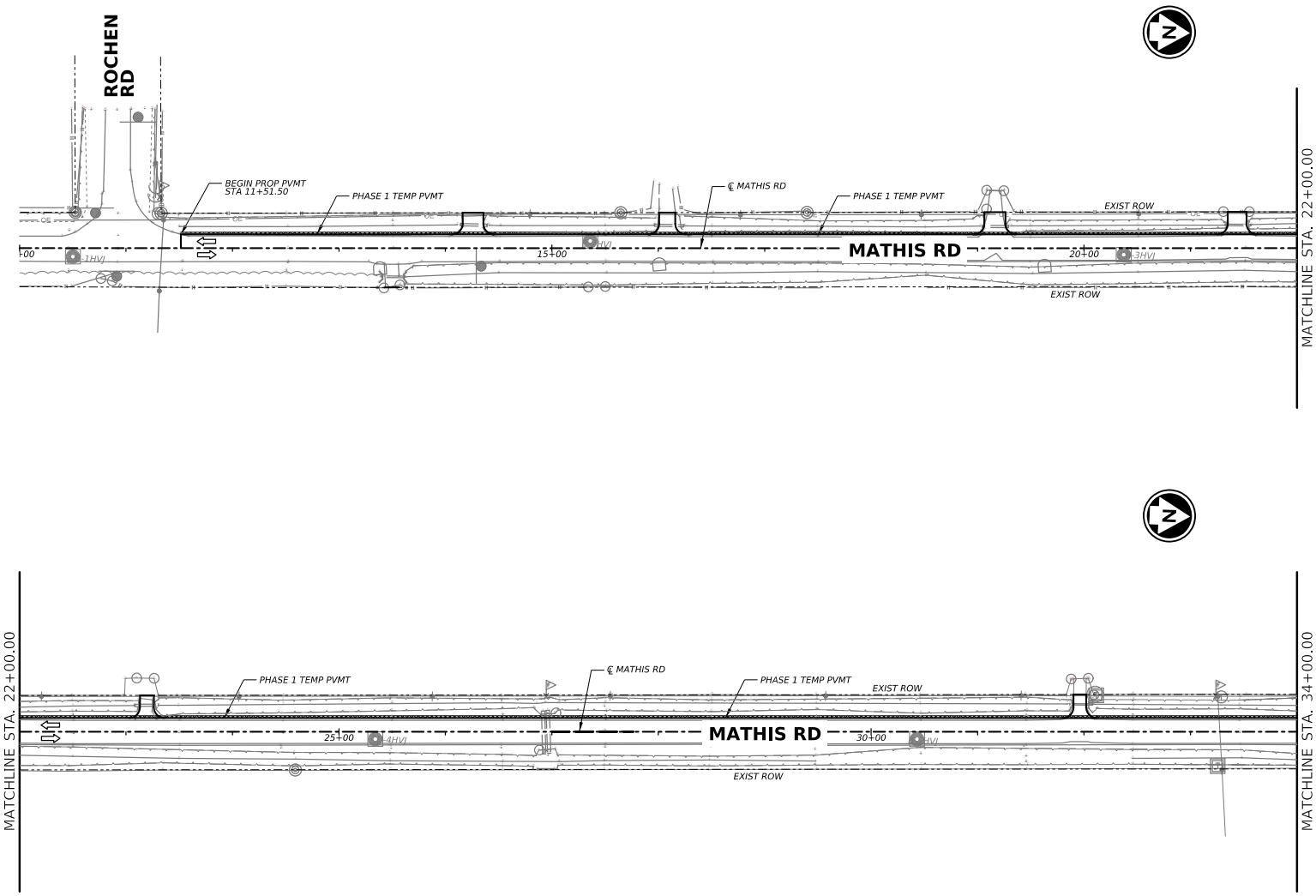
Firm No. F-11278

MATHIS ROAD TCP
TYPICAL SECTIONS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		51



LEGEND

- TEMPORARY PAVEMENT CONSTRUCTION (PHASE 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 2)
- PERMANENT PAVEMENT BUILT PREVIOUS PHASE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 50 100
SCALE IN FEET
1"=100' HORIZONTAL
1"=10' VERTICAL

SHEET 1 OF 5

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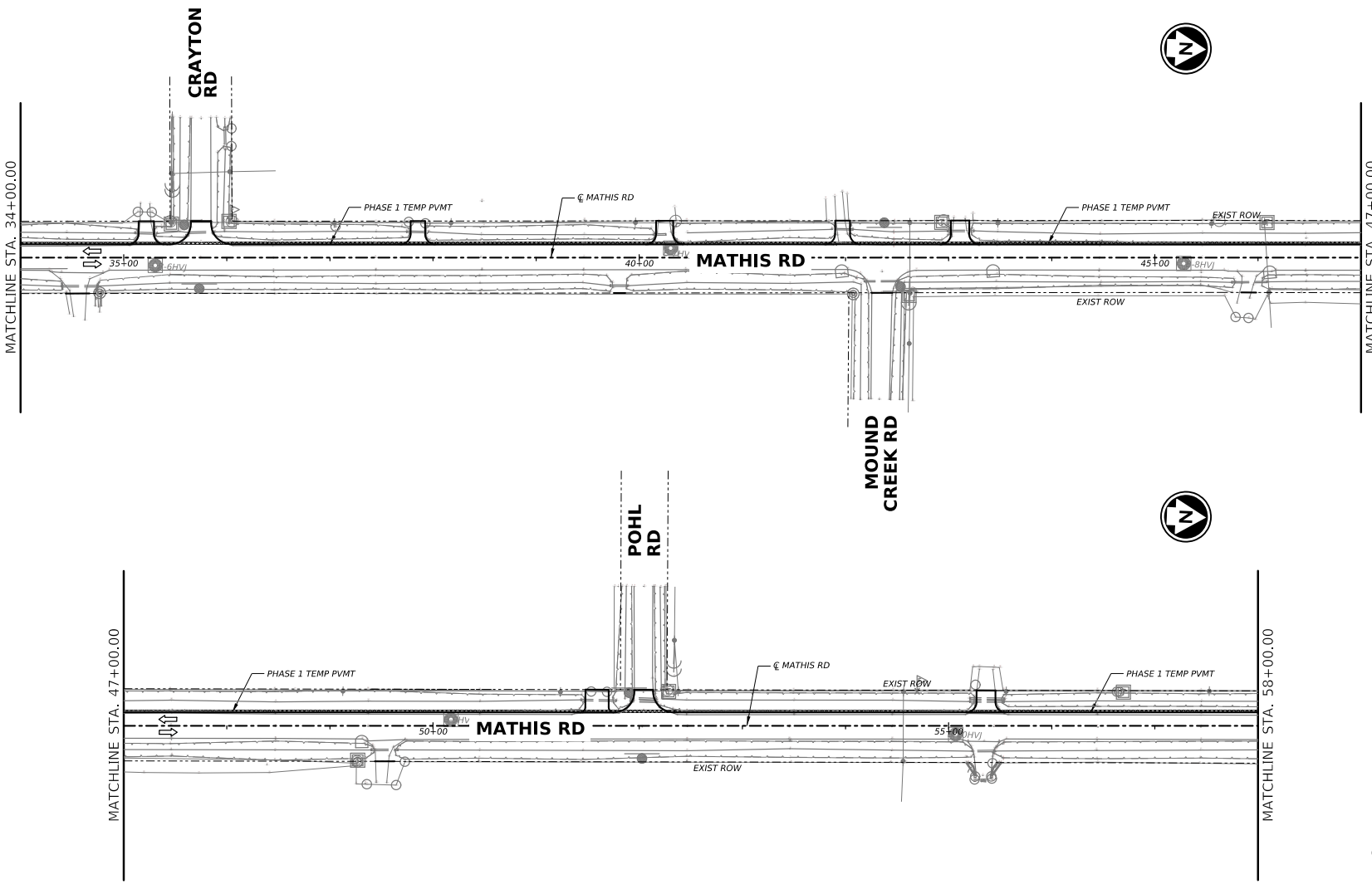
HRGreen.com
Firm No. F-11278

MATHIS ROAD PHASING LAYOUT PHASE 1 BEGIN PROJECT TO STA 34+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		52



LEGEND

- TEMPORARY PAVEMENT CONSTRUCTION (PHASE 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 2)
- PERMANENT PAVEMENT BUILT PREVIOUS PHASE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 50 100
SCALE IN FEET
1"=100' HORIZONTAL
1"=10' VERTICAL

SHEET 2 OF 5

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS WALLER COUNTY

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MATHIS ROAD PHASING LAYOUT PHASE 1 STA 34+00 TO STA 58+00

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		53

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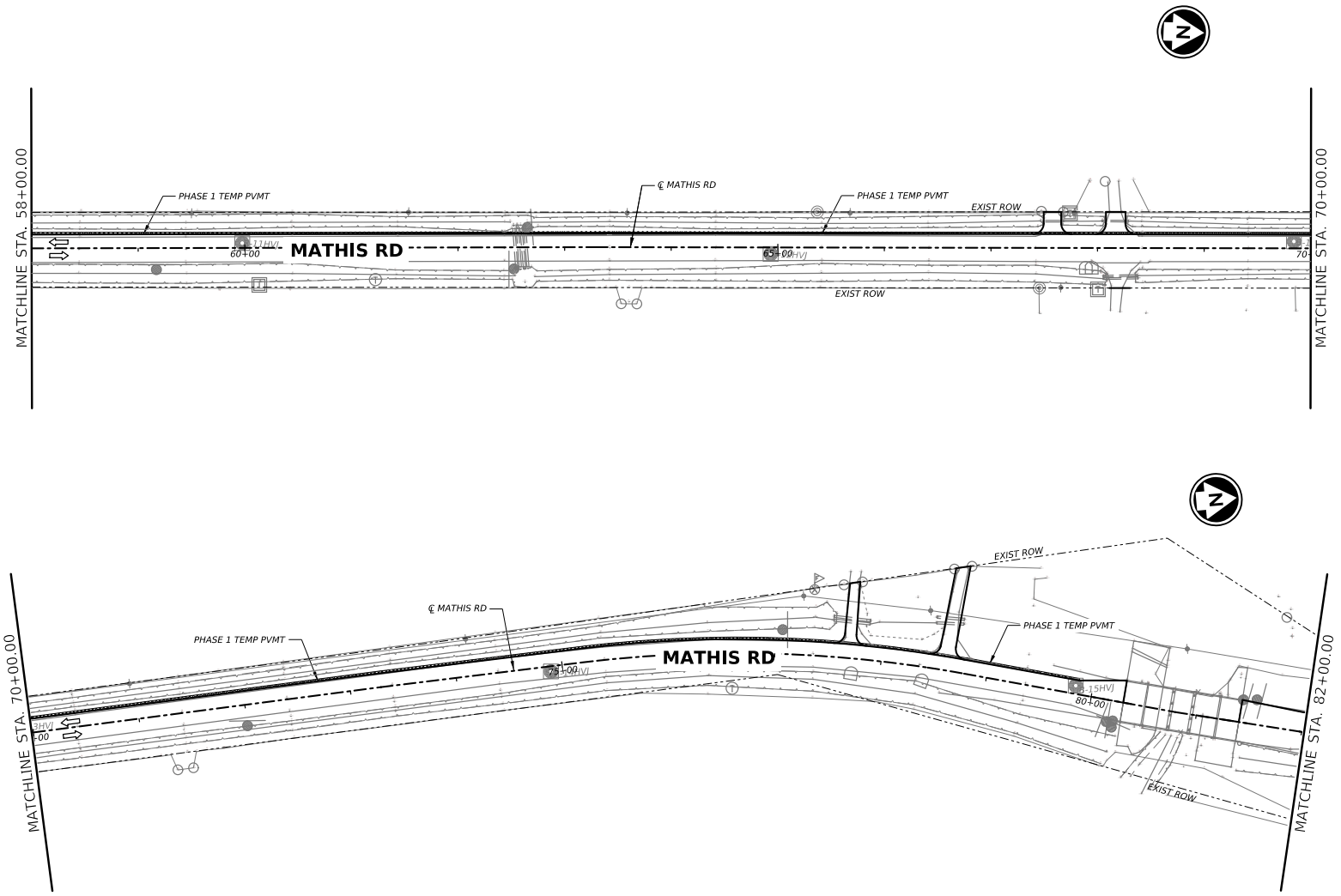

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SHEET 3 OF 5

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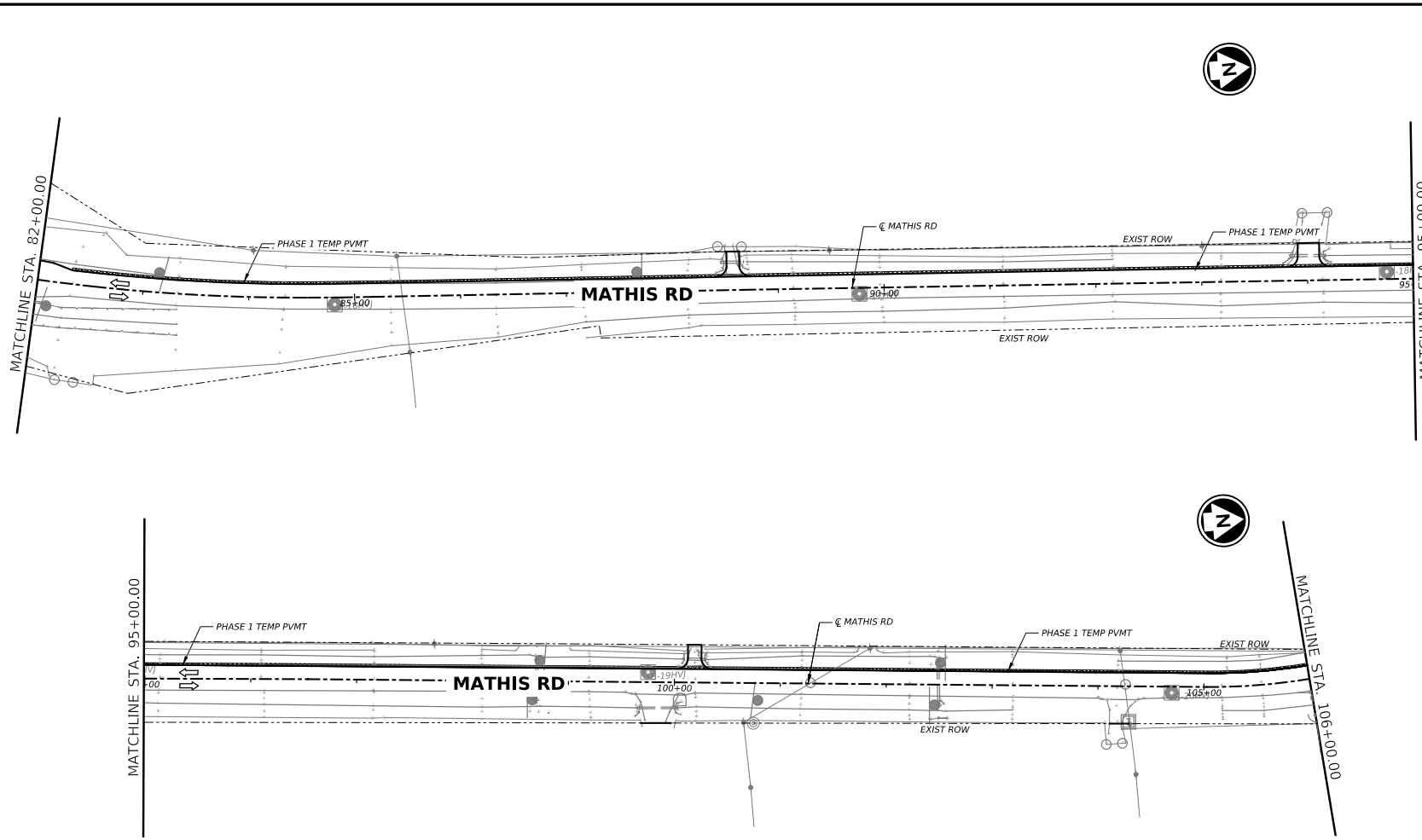
MATHIS ROAD
PHASING LAYOUT
PHASE 1
STA 58+00 TO STA 82+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		54



STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 50 100
SCALE IN FEET
1"=100' HORIZONTAL
1"=10' VERTICAL

SHEET 4 OF 5

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WALLER COUNTY ENGINEERING DEPARTMENT

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MATHIS ROAD PHASING LAYOUT PHASE 1 STA 82+00 TO STA 106+00

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		55

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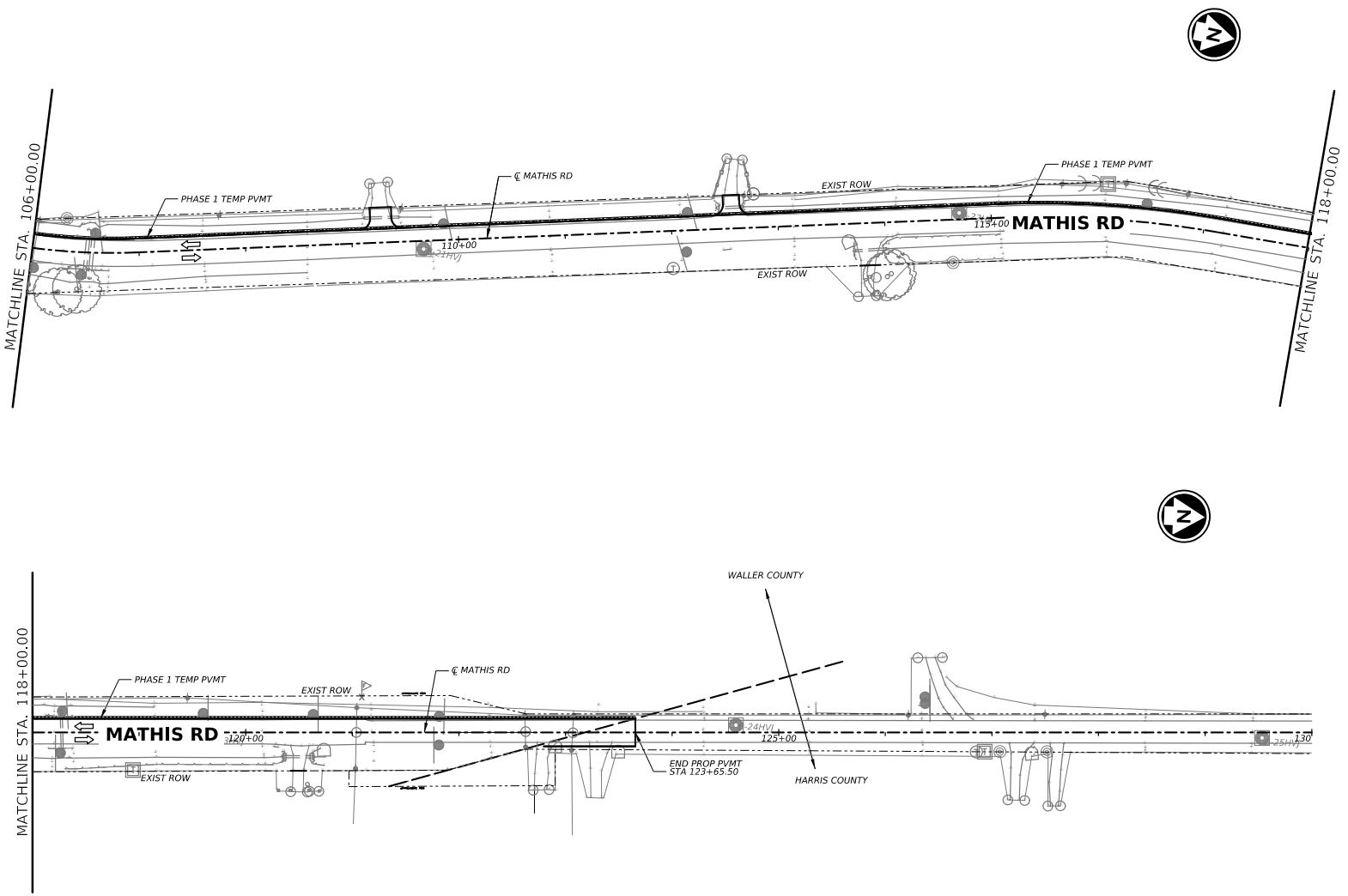

LEGEND

- TEMPORARY PAVEMENT CONSTRUCTION (PHASE 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 2)
- PERMANENT PAVEMENT BUILT PREVIOUS PHASE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
5/29/2026

0 50 100
SCALE IN FEET
1"=100' HORIZONTAL
1"=10' VERTICAL

SHEET 5 OF 5

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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MATHIS ROAD PHASING LAYOUT PHASE 1 STA 106+00 TO END PROJECT

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		56

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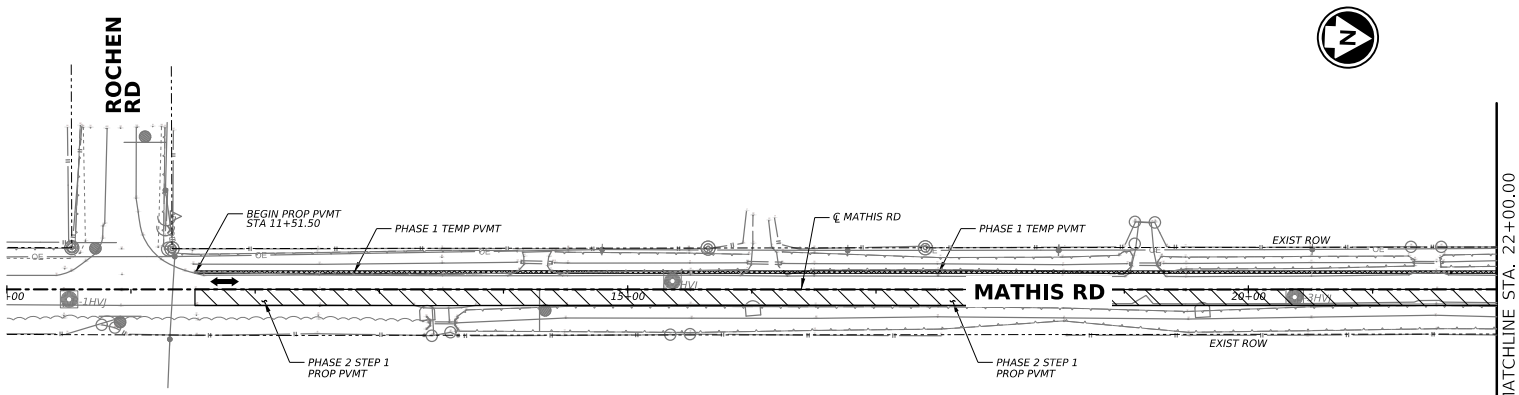

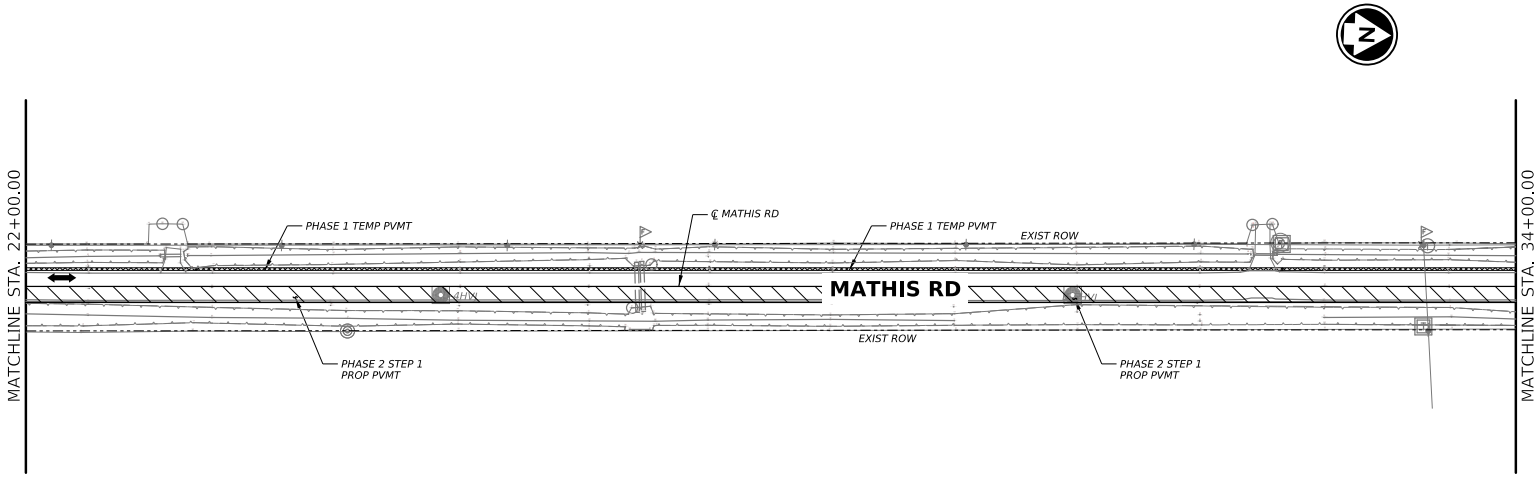

LEGEND

- TEMPORARY PAVEMENT CONSTRUCTION (PHASE 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 2)
- PERMANENT PAVEMENT BUILT PREVIOUS PHASE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- W1, E1 — SECTION BREAK SEE NOTE 1

NOTES:

1. SECTION BREAK INFORMATION PROVIDED IN THE PLAN SET TO DICTATE THE MAXIMUM LENGTH OF CLOSURE ALLOWED FOR CONSTRUCTION OF EACH SECTION. SEE TXDOT TCP(1-7)-26 AND RDTS-25 FOR FURTHER DETAILS

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 50 100
SCALE IN FEET
1"=100' HORIZONTAL
1"=10' VERTICAL

SHEET 1 OF 5

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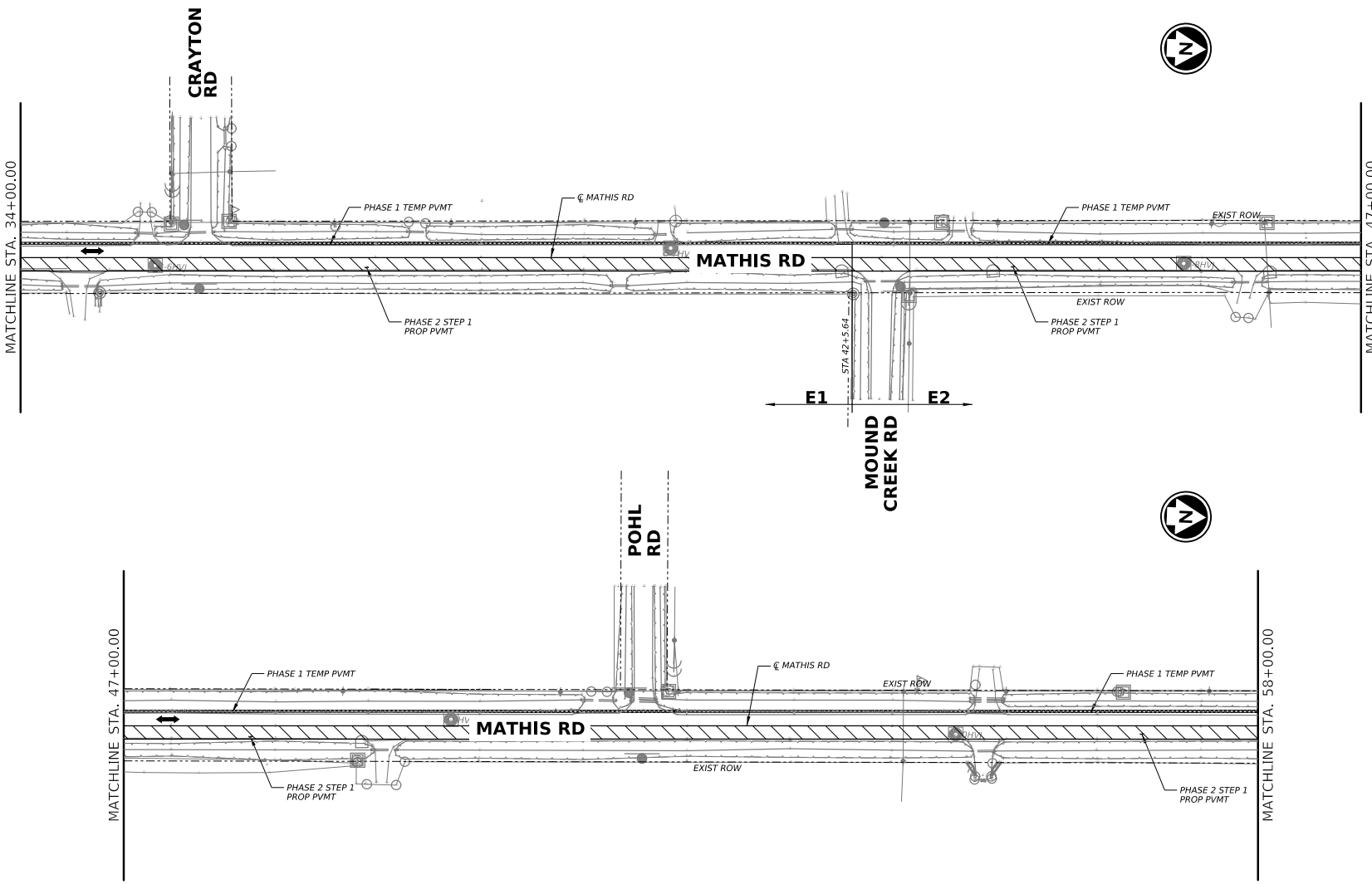
MATHIS ROAD PHASING LAYOUT PHASE 2 STEP 1 BEGIN PROJECT TO STA 34+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		57



LEGEND

- TEMPORARY PAVEMENT CONSTRUCTION (PHASE 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 2)
- PERMANENT PAVEMENT BUILT PREVIOUS PHASE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- W1, E1 — SECTION BREAK SEE NOTE 1

NOTES:

1. SECTION BREAK INFORMATION PROVIDED IN THE PLAN SET TO DICTATE THE MAXIMUM LENGTH OF CLOSURE ALLOWED FOR CONSTRCTION OF EACH SECTION. SEE TXDOT TCP(1-7)-26 AND RDTS-25 FOR FURTHER DETAILS

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 50 100
SCALE IN FEET
1"=100' HORIZONTAL
1"=10' VERTICAL

SHEET 2 OF 5

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THE STATE OF TEXAS WALLER COUNTY

PREPARED BY:
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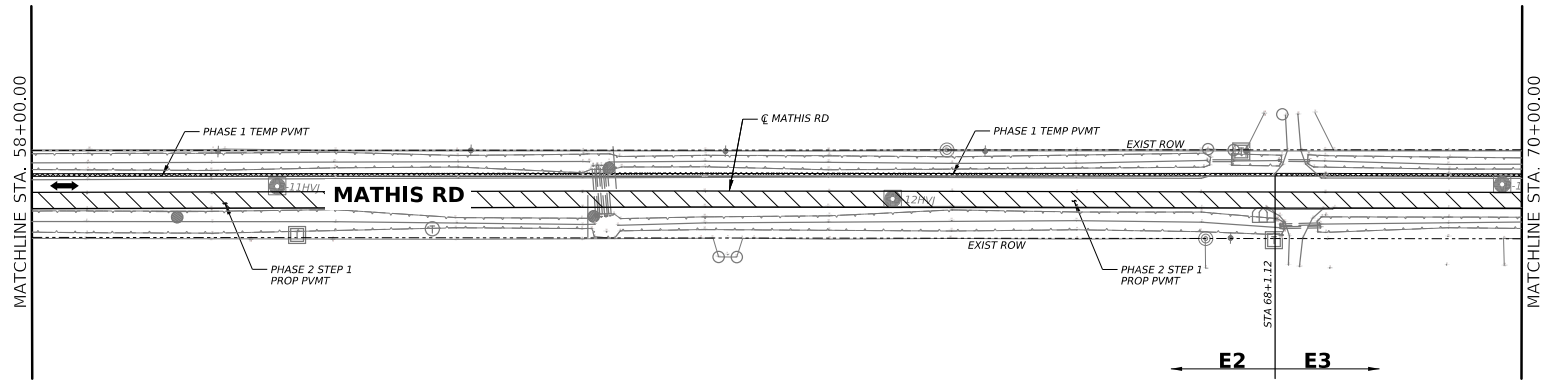
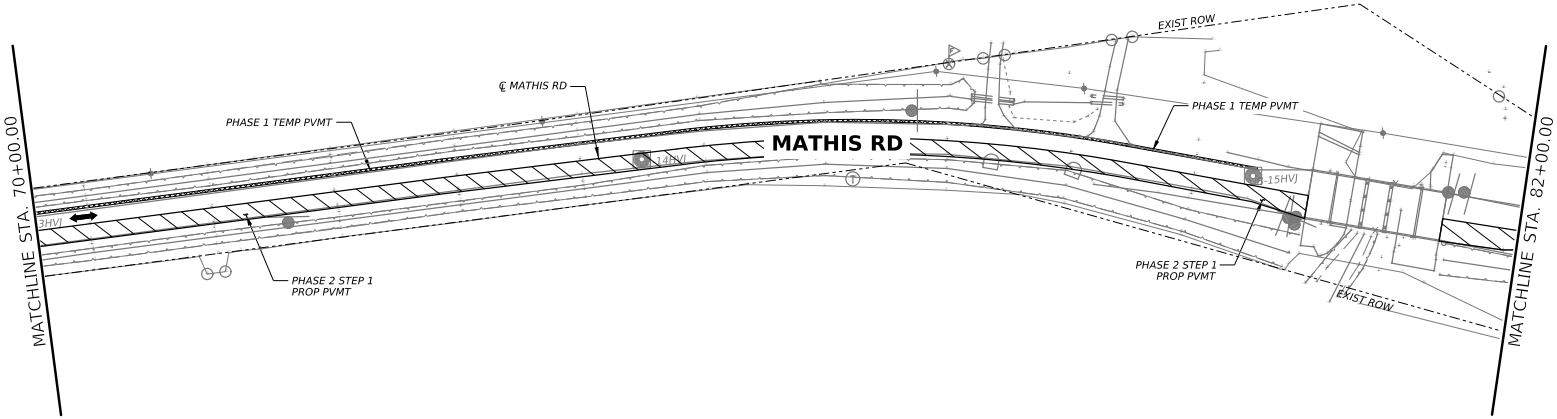
Firm No. F-11278

MATHIS ROAD
PHASING LAYOUT
PHASE 2 STEP 1
STA 34+00 TO STA 58+00

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		58





LEGEND

- TEMPORARY PAVEMENT CONSTRUCTION (PHASE 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 2)
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- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- W1, E1 — SECTION BREAK SEE NOTE 1

NOTES:

1. SECTION BREAK INFORMATION PROVIDED IN THE PLAN SET TO DICTATE THE MAXIMUM LENGTH OF CLOSURE ALLOWED FOR CONSTRUCTION OF EACH SECTION. SEE TXDOT TCP(1-7)-26 AND RDTS-25 FOR FURTHER DETAILS

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120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 50 100
SCALE IN FEET
1"=100' HORIZONTAL
1"=10' VERTICAL

SHEET 3 OF 5

REV. NO.	DATE	DESCRIPTION	BY

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MATHIS ROAD
PHASING LAYOUT
PHASE 2 STEP 1
STA 58+00 TO STA 82+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		59

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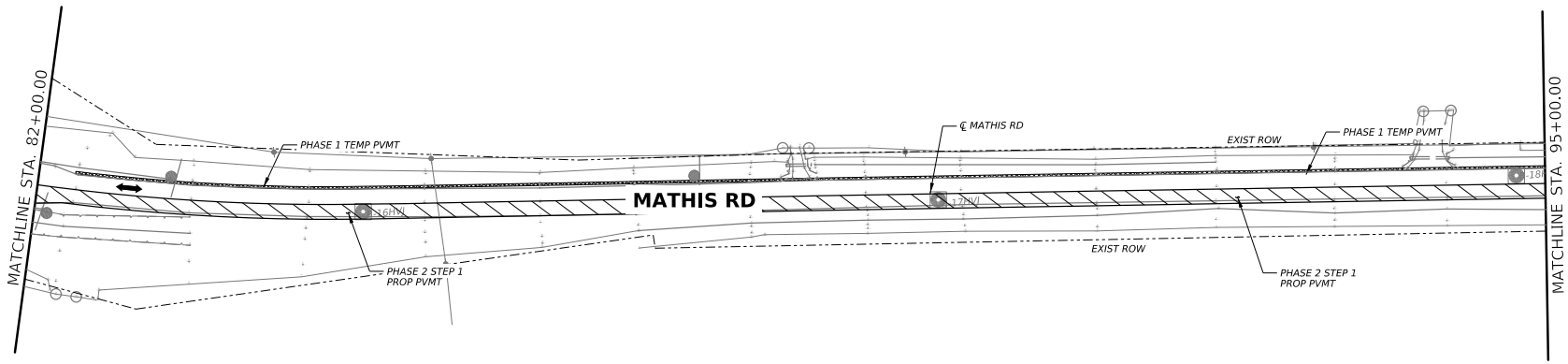

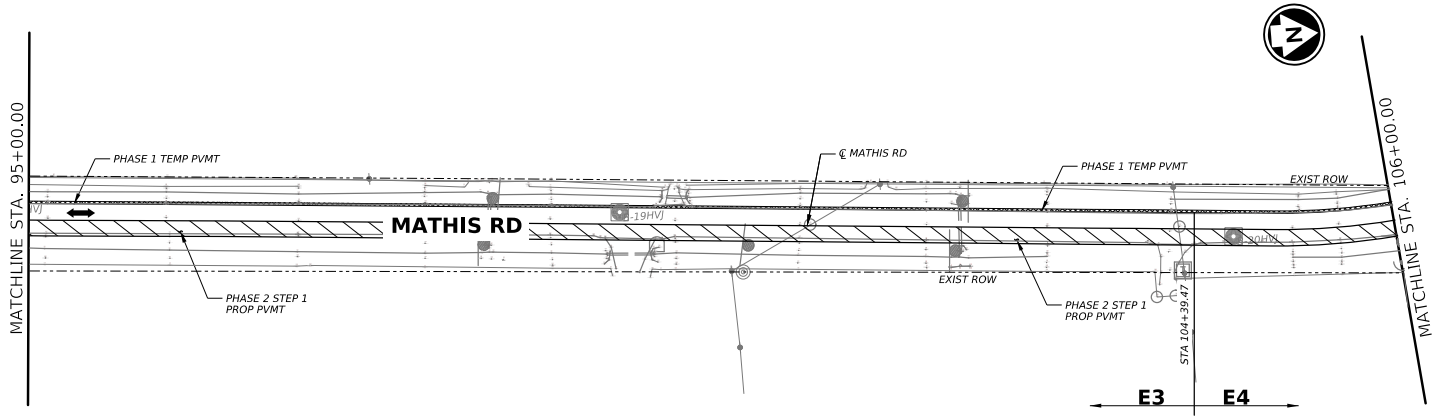

LEGEND

- TEMPORARY PAVEMENT CONSTRUCTION (PHASE 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 2)
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- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
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NOTES:

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5/29/2026

0 50 100
SCALE IN FEET
1"=100' HORIZONTAL
1"=10' VERTICAL

SHEET 4 OF 5

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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(713) 965-0044 FAX
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Firm No. F-11278

MATHIS ROAD PHASING LAYOUT PHASE 2 STEP 1 STA 82+00 TO STA 106+00

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		60

DATE: 5/29/2026 10:42:24 AM
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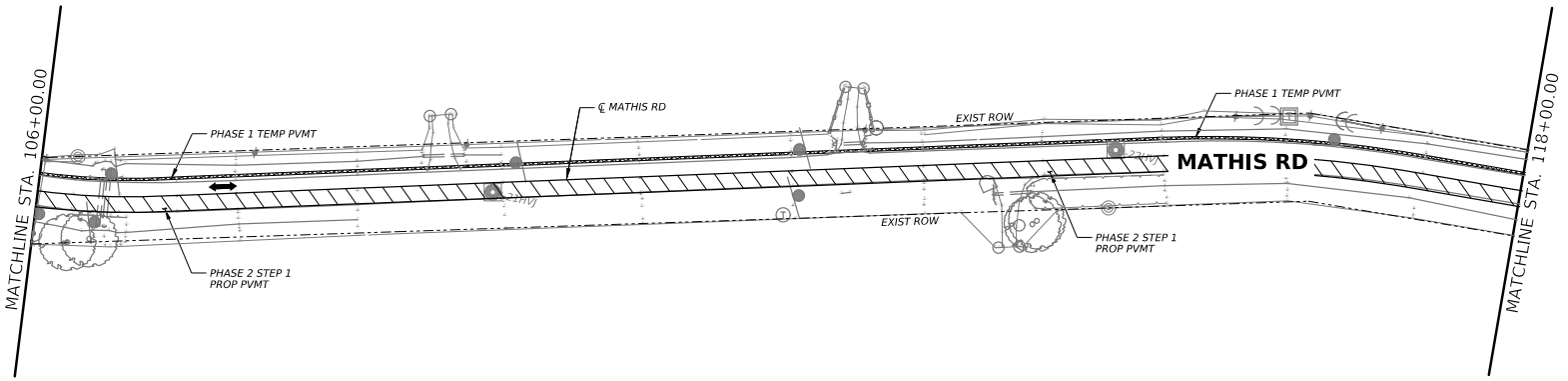

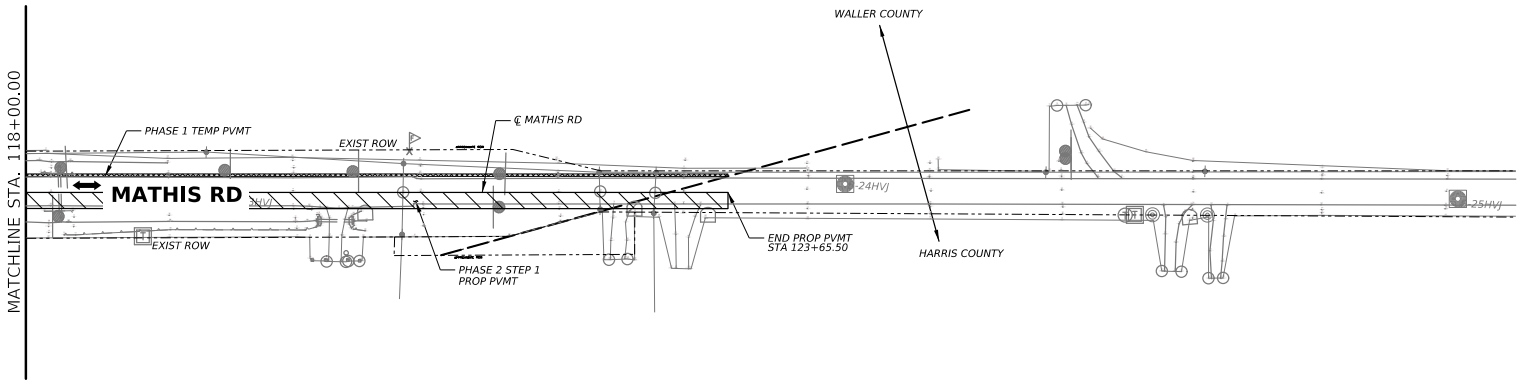

LEGEND

- TEMPORARY PAVEMENT CONSTRUCTION (PHASE 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 2)
- PERMANENT PAVEMENT BUILT PREVIOUS PHASE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- W1, E1 — SECTION BREAK SEE NOTE 1

NOTES:

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STATE OF TEXAS
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5/29/2026

0 50 100
SCALE IN FEET
1"=100' HORIZONTAL
1"=10' VERTICAL

SHEET 5 OF 5

REV. NO.	DATE	DESCRIPTION	BY

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Firm No. F-11278

MATHIS ROAD PHASING LAYOUT PHASE 2 STEP 1 STA 106+00 TO END PROJECT

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		61

DATE: 5/29/2026 10:42:25 AM
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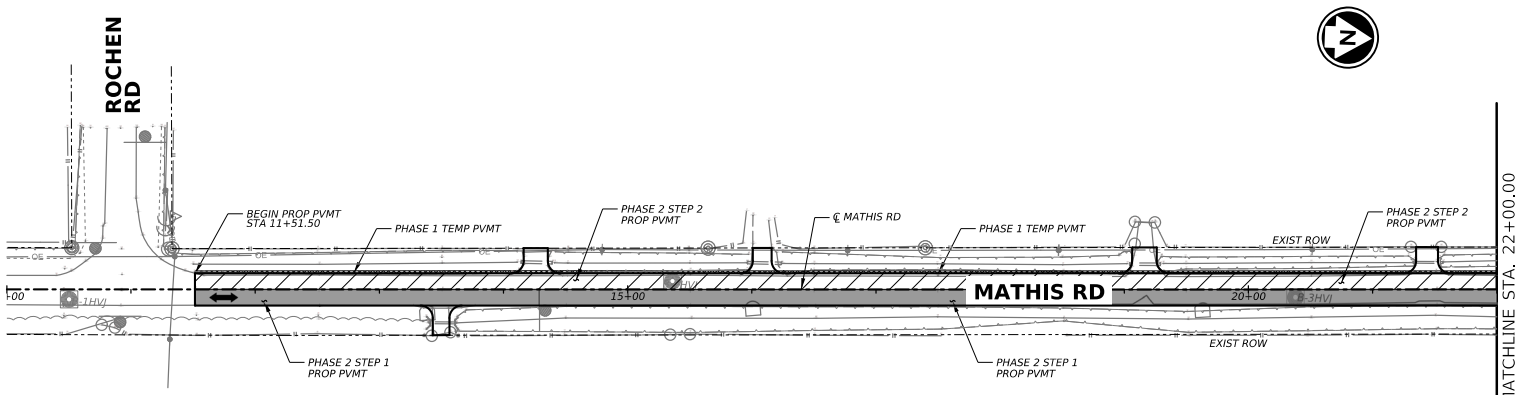

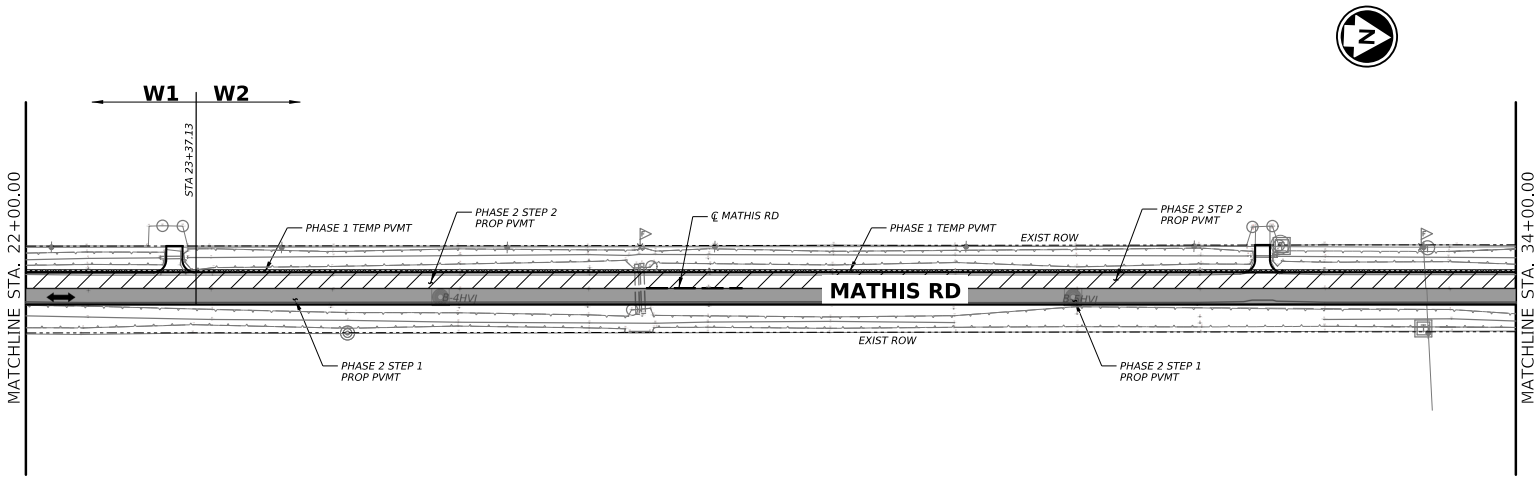

LEGEND

- TEMPORARY PAVEMENT CONSTRUCTION (PHASE 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 2)
- PERMANENT PAVEMENT BUILT PREVIOUS PHASE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- W1, E1 — SECTION BREAK SEE NOTE 1

NOTES:

1. SECTION BREAK INFORMATION PROVIDED IN THE PLAN SET TO DICTATE THE MAXIMUM LENGTH OF CLOSURE ALLOWED FOR CONSTRUCTION OF EACH SECTION. SEE TXDOT TCP(1-7)-26 AND RDTS-25 FOR FURTHER DETAILS

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 50 100
SCALE IN FEET
1"=100' HORIZONTAL
1"=10' VERTICAL

SHEET 1 OF 5

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD PHASING LAYOUT PHASE 2 STEP 2 BEGIN PROJECT TO STA 34+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		62

DATE: 5/29/2026 10:42:26 AM
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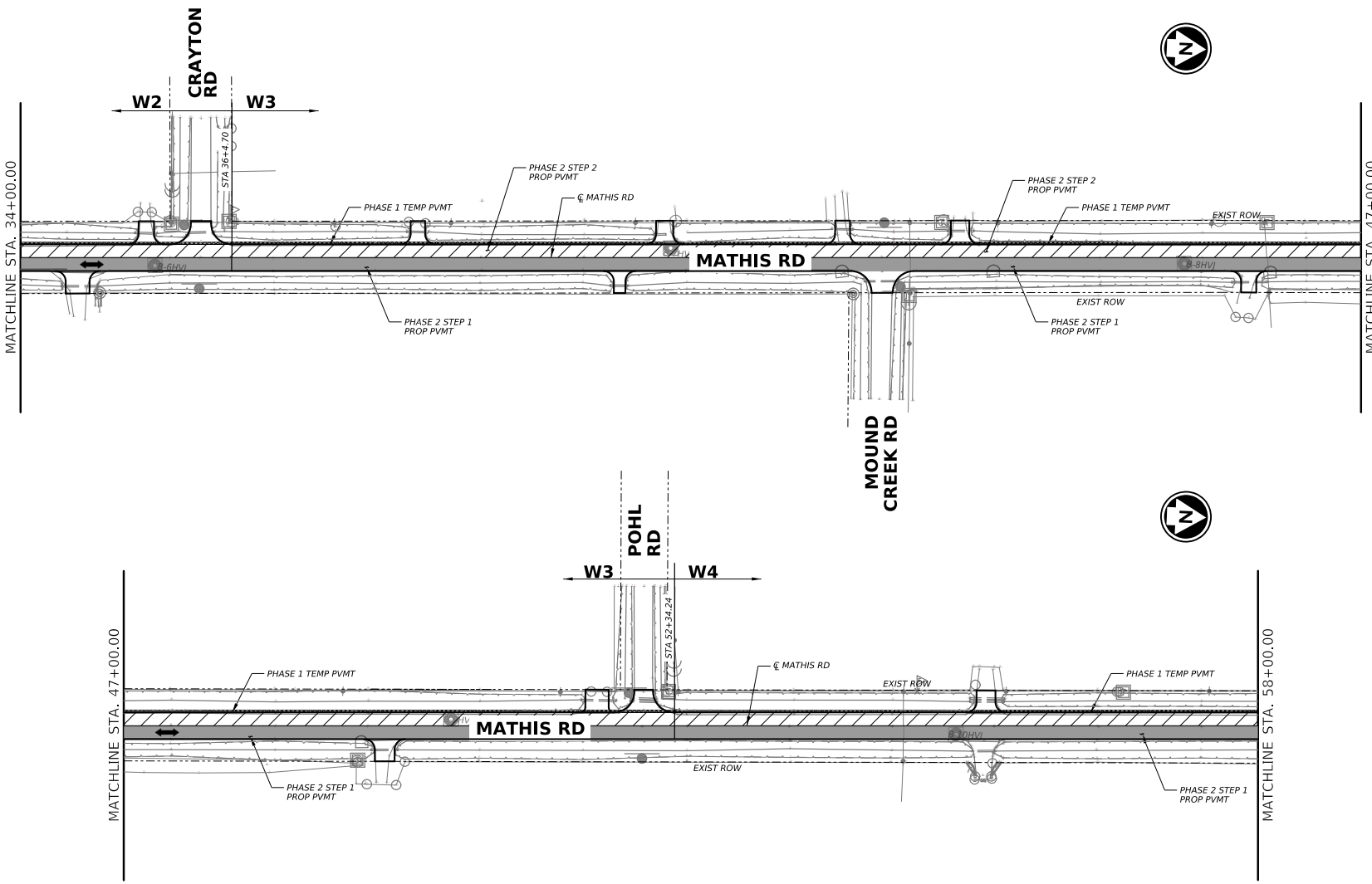

LEGEND

- TEMPORARY PAVEMENT CONSTRUCTION (PHASE 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 2)
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- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- W1, E1 — SECTION BREAK SEE NOTE 1

NOTES:

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STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 50 100
SCALE IN FEET
1"=100' HORIZONTAL
1"=10' VERTICAL

SHEET 2 OF 5

DATE: 5/29/2026 10:42:27 AM
FILE: \\hrgreen.com\HRGData\2024\240418\Design\Data\4 - Design\Plan Set\2. TCP\4188 PHASING LAYOUT 2 STEP 2.dgn

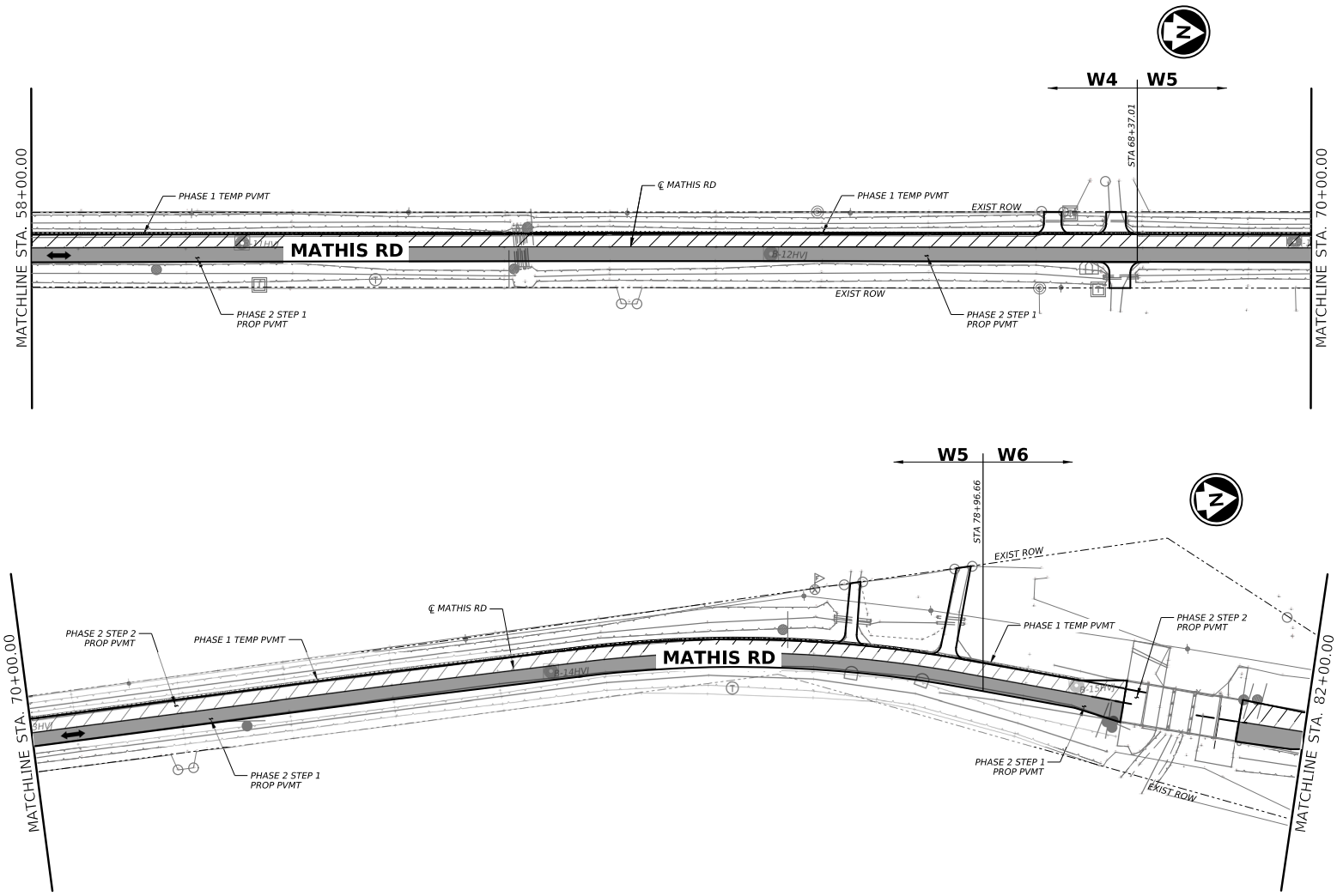
REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD PHASING LAYOUT PHASE 2 STEP 2 STA 34+00 TO STA 58+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		63



LEGEND

- TEMPORARY PAVEMENT CONSTRUCTION (PHASE 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 2)
- PERMANENT PAVEMENT BUILT PREVIOUS PHASE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- W1, E1 — SECTION BREAK SEE NOTE 1

NOTES:

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STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 50 100
SCALE IN FEET
1"=100' HORIZONTAL
1"=10' VERTICAL

SHEET 3 OF 5

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
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(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD
PHASING LAYOUT
PHASE 2 STEP 2
STA 58+00 TO STA 82+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		64

DATE: 5/29/2026 10:42:28 AM
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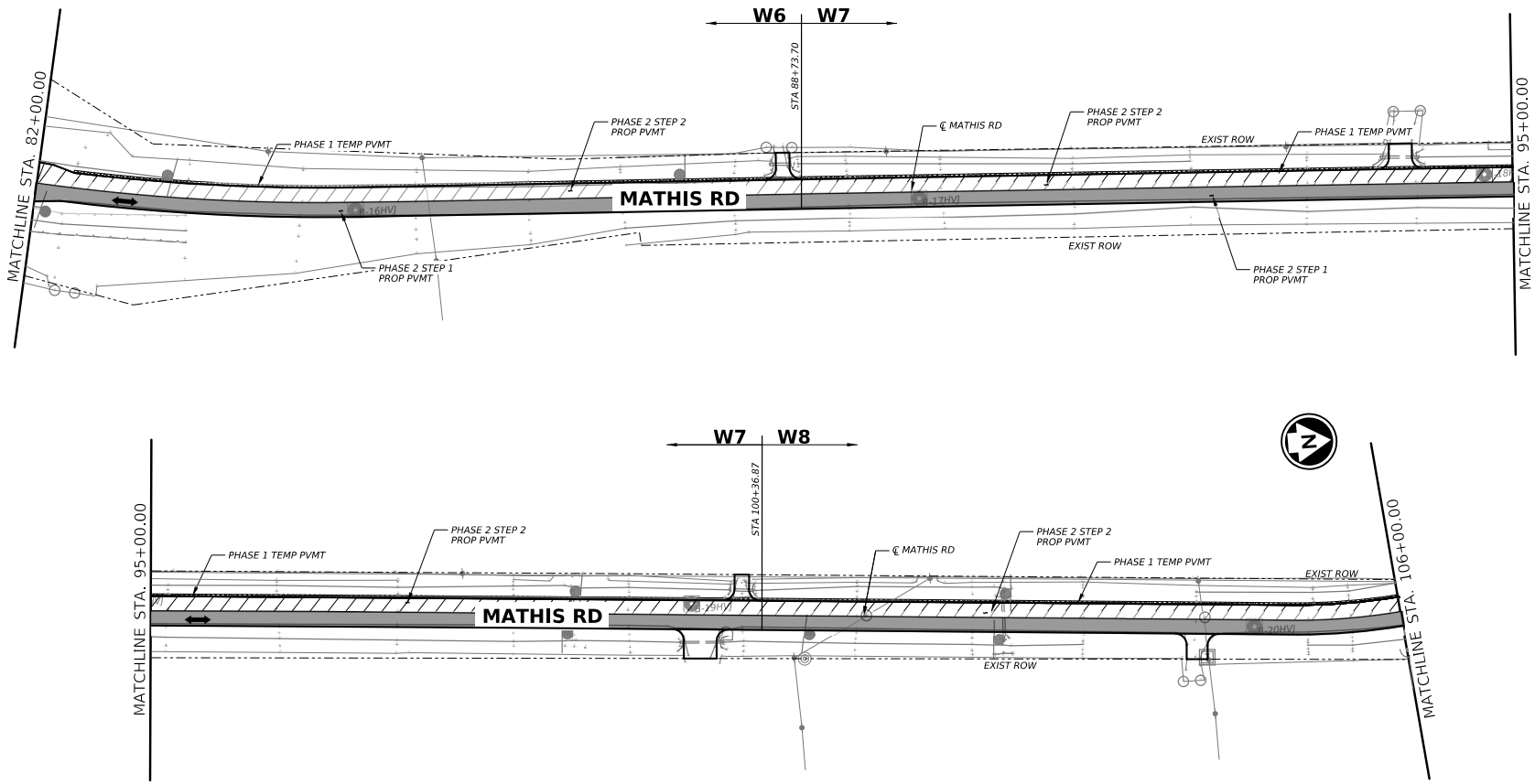

LEGEND

- TEMPORARY PAVEMENT CONSTRUCTION (PHASE 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 2)
- PERMANENT PAVEMENT BUILT PREVIOUS PHASE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- W1, E1 — SECTION BREAK SEE NOTE 1

NOTES:

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STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 50 100
SCALE IN FEET
1"=100' HORIZONTAL
1"=10' VERTICAL

SHEET 4 OF 5

DATE: 5/29/2026 10:42:28 AM
FILE: \\hrgreen.com\HRGData\2024\240418\8\DesignData\4 - Design\Plan Set\2. TCP\4188 PHASING LAYOUT 2 STEP 2.dgn

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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HRGreen
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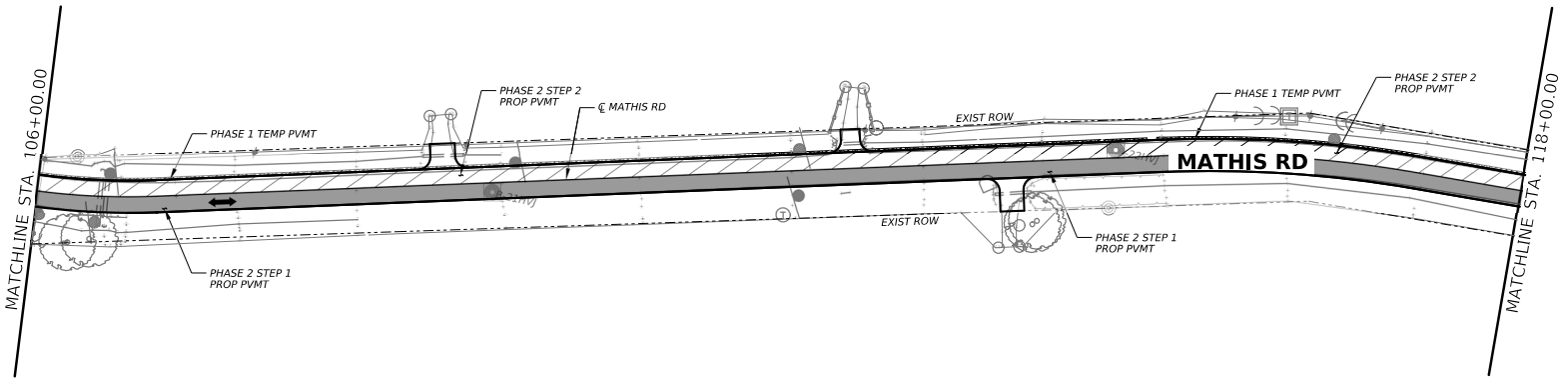
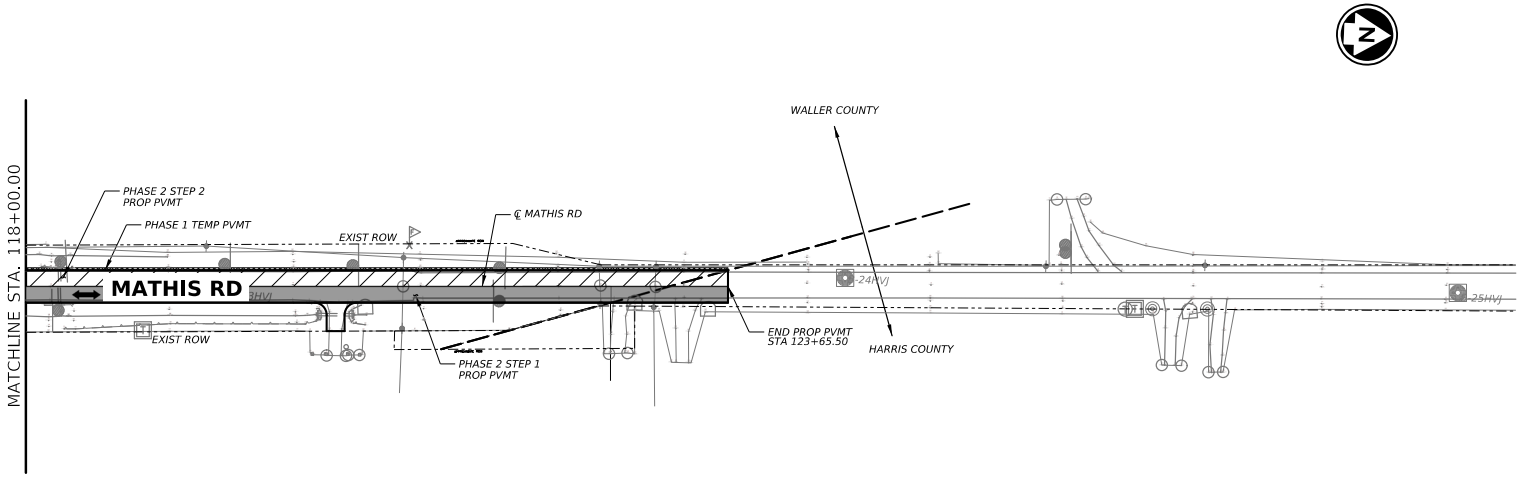
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD PHASING LAYOUT PHASE 2 STEP 2 STA 82+00 TO STA 106+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		65





LEGEND

- TEMPORARY PAVEMENT CONSTRUCTION (PHASE 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 1)
- PERMANENT PAVEMENT CONSTRUCTION (PHASE 2, STEP 2)
- PERMANENT PAVEMENT BUILT PREVIOUS PHASE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- W1, E1 — SECTION BREAK SEE NOTE 1

NOTES:

1. SECTION BREAK INFORMATION PROVIDED IN THE PLAN SET TO DICTATE THE MAXIMUM LENGTH OF CLOSURE ALLOWED FOR CONSTRUCTION OF EACH SECTION. SEE TXDOT TCP(1-7)-26 AND RDTS-25 FOR FURTHER DETAILS

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 50 100
SCALE IN FEET
1"=100' HORIZONTAL
1"=10' VERTICAL

SHEET 5 OF 5

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

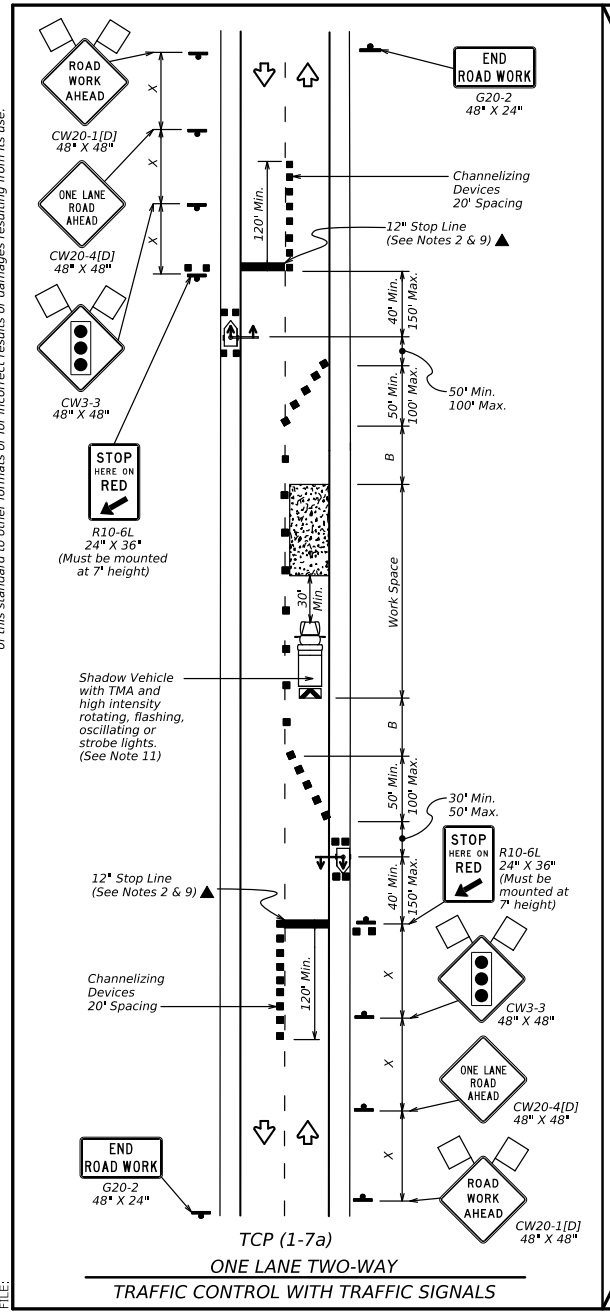
PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD PHASING LAYOUT PHASE 2 STEP 2 STA 106+00 TO END PROJECT

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		66

DATE: 5/29/2026 10:42:29 AM
FILE: \\hrgreen.com\HRGData\2024\240418\DesignData\4 - Design\Plan Set\2. TCP\4188 PHASING LAYOUT 2 STEP 2.dgn

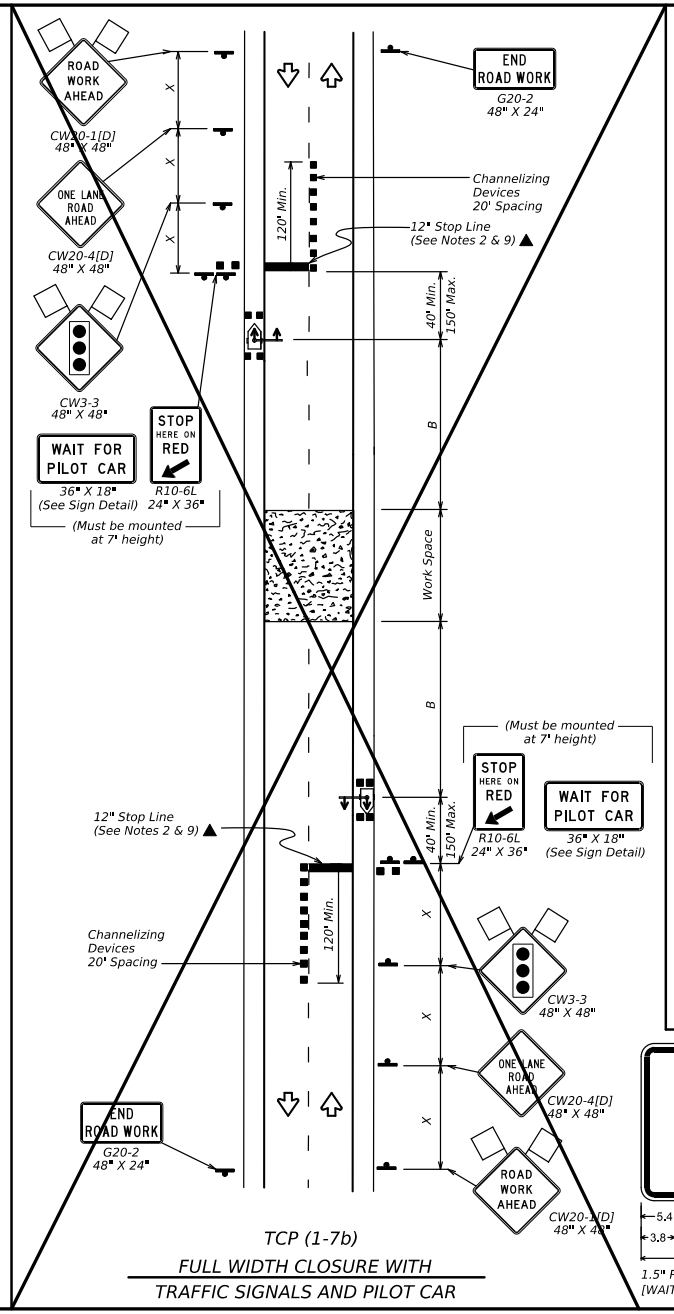
DATE:
FILE:



TCP (1-7a)

ONE LANE TWO-WAY

TRAFFIC CONTROL WITH TRAFFIC SIGNALS



TCP (1-7b)

FULL WIDTH CLOSURE WITH

TRAFFIC SIGNALS AND PILOT CAR

LEGEND			
	Sign		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Temporary or Portable Traffic Signal	M	Portable Changeable Message Sign (PCMS)
	Flag		Traffic Flow

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices: On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45		450'	495'	540'	45'	90'	320'	195'	360'
50	$L=WS$	500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

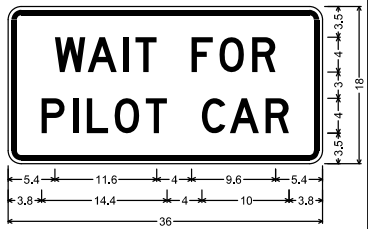
* Conventional Roads Only

** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
		✓		

GENERAL NOTES

1. Unless otherwise stated in the plans, flags attached to signs are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol (▲) may be omitted when stated elsewhere in the plans; or for routine maintenance work, when approved by the Engineer.
3. A BE PREPARED TO STOP (W3-4) sign may be installed after the ONE LANE ROAD AHEAD (CW20-4[D]) sign, but proper sign spacing shall be maintained.
4. The ROAD WORK AHEAD (CW20-1[D]) sign may be repeated, if the visibility of the work zone is less than 1500'.
5. If a pilot car is used to guide vehicles through the traffic control zone, the vehicle shall have an identification name displayed and a PILOT CAR FOLLOW ME (G20-4) sign or message board mounted - in a conspicuous position on rear.
6. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the signal and a queue of stopped vehicles (see table above).
7. Channelizing devices are recommended for all applications. Devices may be offset as needed for Maintenance operations.
8. Modify signal programming and operation to conform to all work zone layout changes and test for proper signal operation.
9. A temporary Stop Line may be used in conjunction with a STOP HERE ON RED (R10-6) sign.
10. Proper alignment of overhead signal with on-coming lane should be ensured.
11. A Shadow Vehicle with TMA should be used anytime it can be positioned approximately 30' to 100' in advance of workers exposed to traffic - without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.



1.5" Radius, 0.625" Border, 0.375" Indent, Black on White; [WAIT FOR] D; [PILOT CAR] D;

Texas Department of Transportation

Traffic Safety Division Standard

TRAFFIC CONTROL PLAN SHORT TERM TEMPORARY SIGNALS

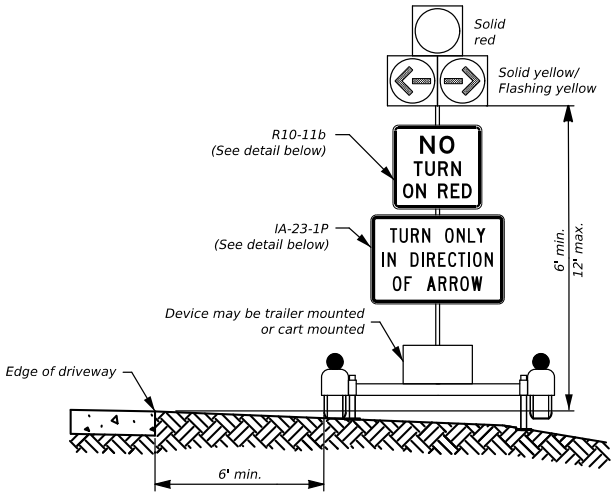
TCP(1-7)-26

FILE: tcp(1-7)-26.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT March 2026	CONT	SECT	JOB	HIGHWAY
REVISIONS 3-26	DIST	COUNTY		SHEET NO. 67

157

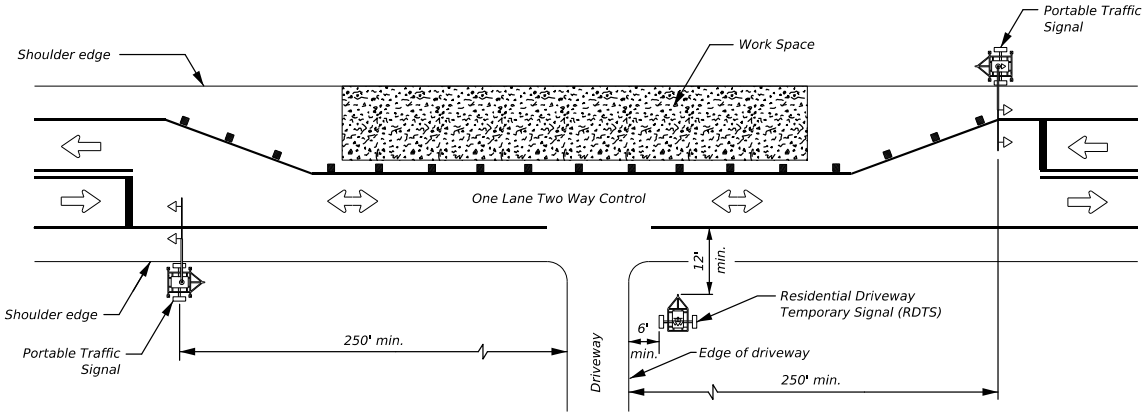
DATE:
FILE:

ELEVATION VIEW



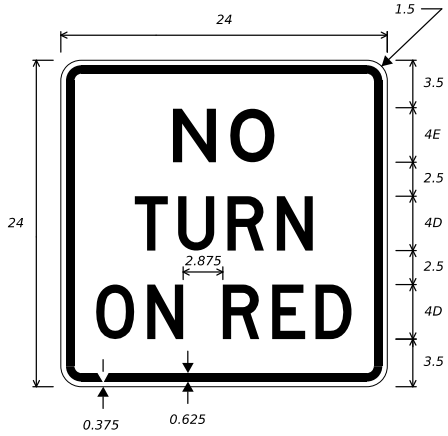
PLAN VIEW

TYPICAL RESIDENTIAL DRIVEWAY TEMPORARY SIGNAL (RDTS) INSTALLATION



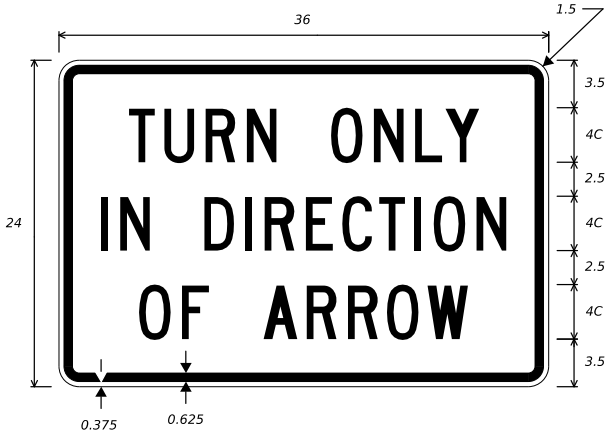
SIGN DETAILS

R10-11b



COLORS: LEGEND - BLACK
BACKGROUND - WHITE

IA-23-1P



COLORS: LEGEND - BLACK
BACKGROUND - WHITE

GENERAL NOTES

1. Each RDTS must have one signal head consisting of three LED indications as follows; one 12 in. diameter steady red ball indication centered over one 12 in. diameter yellow left arrow and one 12 in. diameter yellow right arrow.
2. RDTS(s) must be paired with a compatible portable traffic signal system for proper functionality. An RDTS shall not be used as a standalone device.
3. See Special Specification "Residential Driveway Temporary Signal" for additional details.
4. See Traffic Control Plan (TCP) standard sheets for placement of portable traffic signals and other traffic control devices.

LEGEND	
⇨	Traffic flow
■	Channelizing device

Texas Department of Transportation

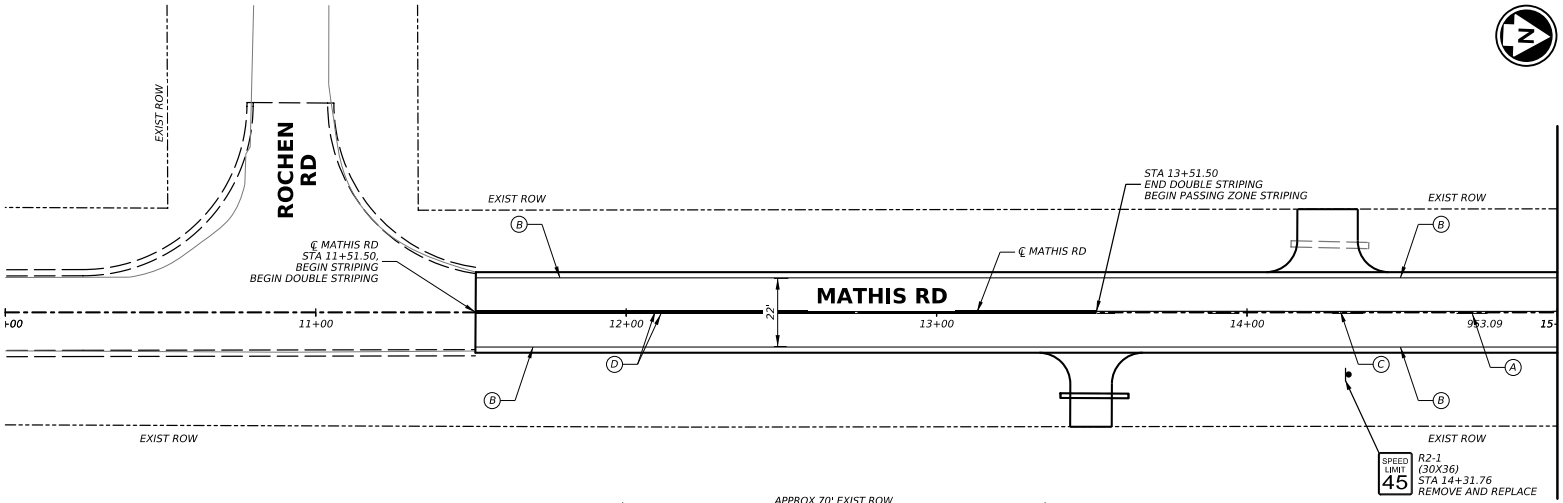
Traffic Safety Division Standard

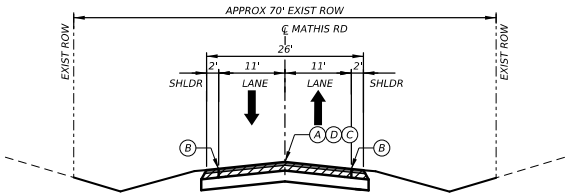
RESIDENTIAL DRIVEWAY TEMPORARY SIGNAL

RDTS-25

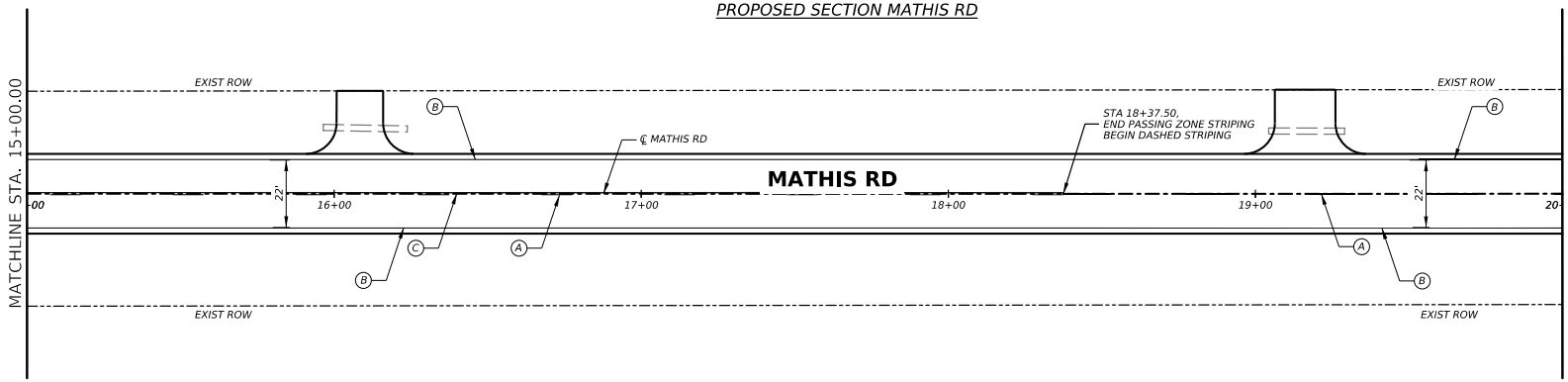
FILE: rdts-25.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 2025	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.
				68

118





PROPOSED SECTION MATHIS RD



LEGEND

- (A) REFL PAV MRK 4" DASHED YELLOW (TY I)
- (B) REFL PAV MRK 4" SOLID WHITE (TY I)
- (C) REFL PAV MRK 4" SOLID YELLOW (TY I)
- (D) REFL PAV MRK 4" DBL SOLID YELLOW (TY I)
- (F) REFL PAV MRK 24" SOLID WHITE
- PROPOSED SIGN

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/12/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 1 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD SIGNING AND STRIPING PLAN BEGIN PROJECT TO STA 20+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		69

DATE: 6/12/2026 9:25:33 AM
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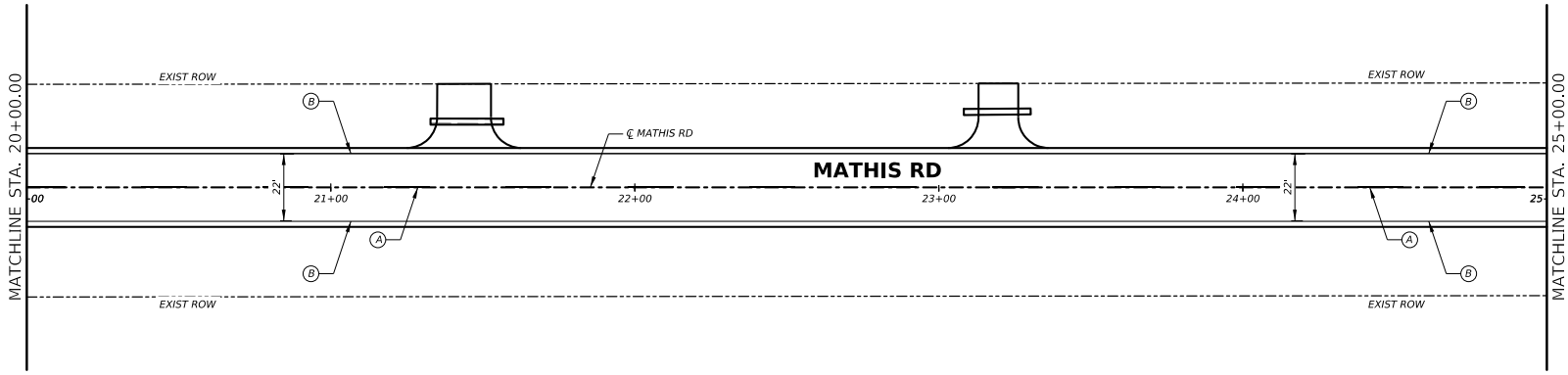

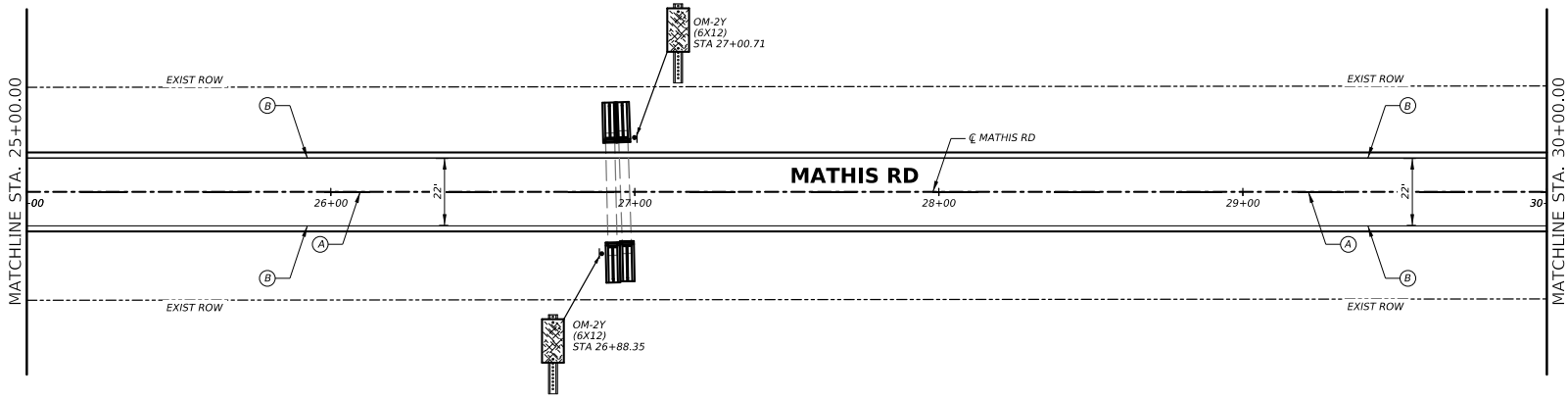

LEGEND

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- (B) REFL PAV MRK 4" SOLID WHITE (TY I)
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- (D) REFL PAV MRK 4" DBL SOLID YELLOW (TY I)
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- PROPOSED SIGN

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/12/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 2 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD SIGNING AND STRIPING PLAN STA 20+00 TO STA 30+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		70

DATE: 6/12/2026 9:25:35 AM
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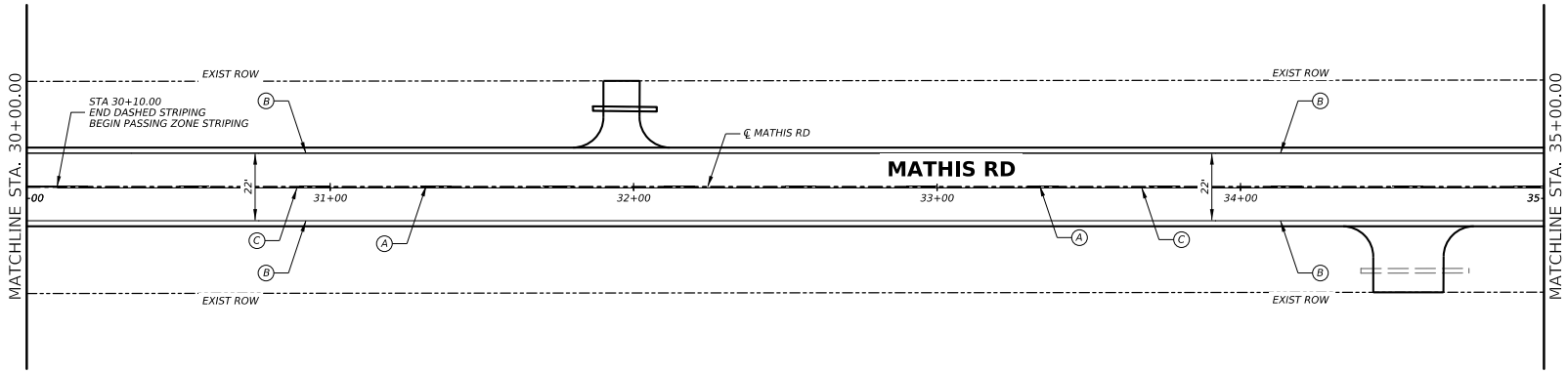

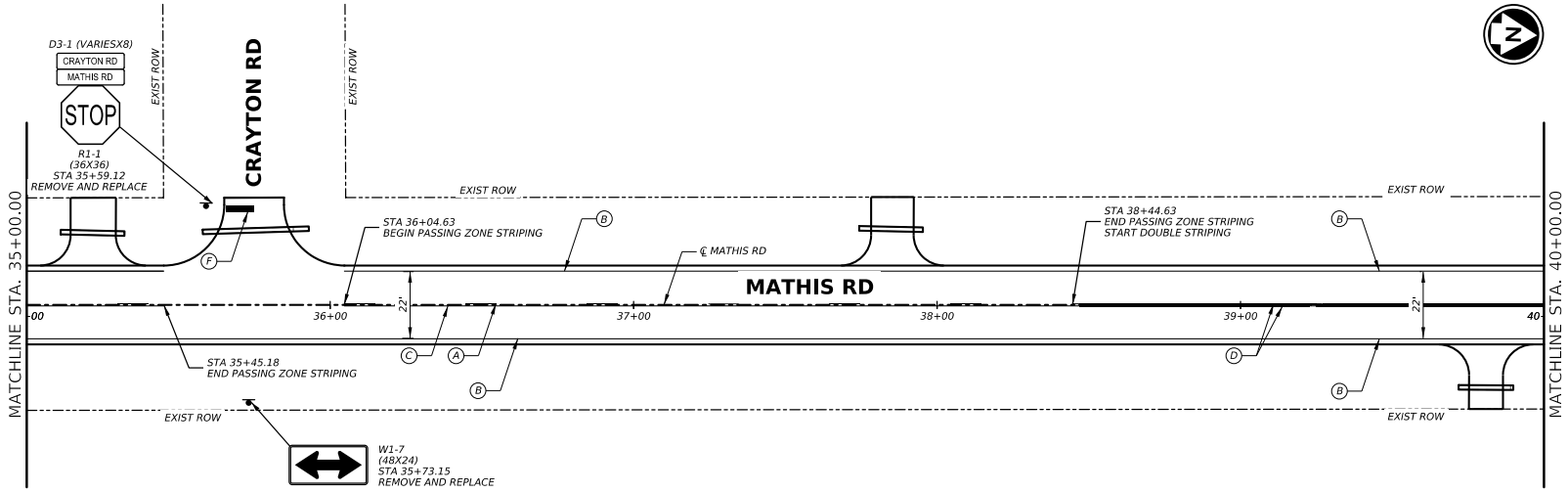

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- (D) REFL PAV MRK 4" DBL SOLID YELLOW (TY I)
- (F) REFL PAV MRK 24" SOLID WHITE
- PROPOSED SIGN

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/12/2026

SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 3 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
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Firm No. F-11278

MATHIS ROAD
SIGNING AND
STRIPING PLAN
STA 30+00 TO STA 40+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		71

DATE: 6/12/2026 9:25:36 AM
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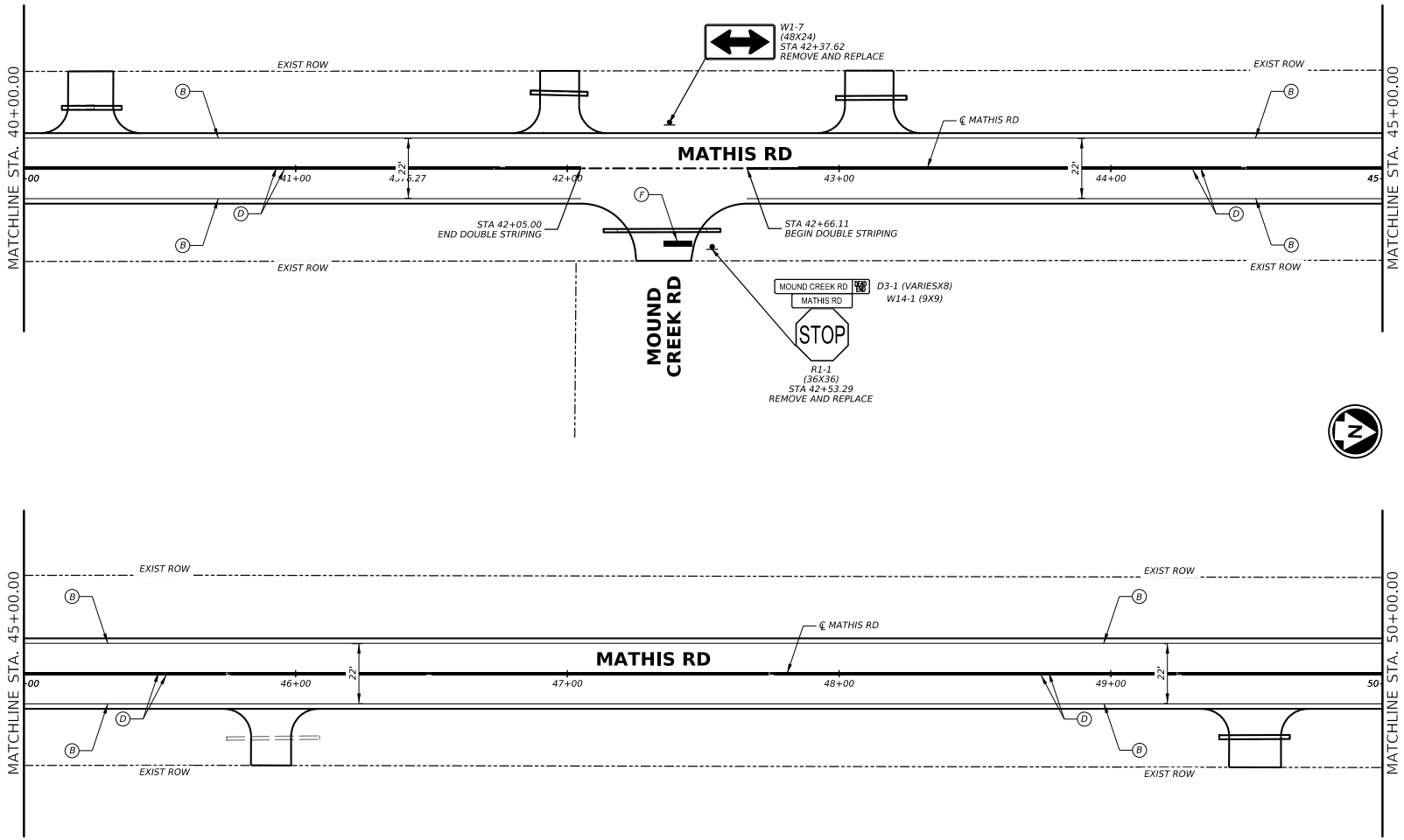

LEGEND

- (A) REFL PAV MRK 4" DASHED YELLOW (TY I)
- (B) REFL PAV MRK 4" SOLID WHITE (TY I)
- (C) REFL PAV MRK 4" SOLID YELLOW (TY I)
- (D) REFL PAV MRK 4" DBL SOLID YELLOW (TY I)
- (F) REFL PAV MRK 24" SOLID WHITE
- PROPOSED SIGN

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/12/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 4 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS WALLER COUNTY

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MATHIS ROAD
SIGNING AND
STRIPING PLAN
STA 40+00 TO STA 50+00

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		72

DATE: 6/12/2026 9:25:37 AM
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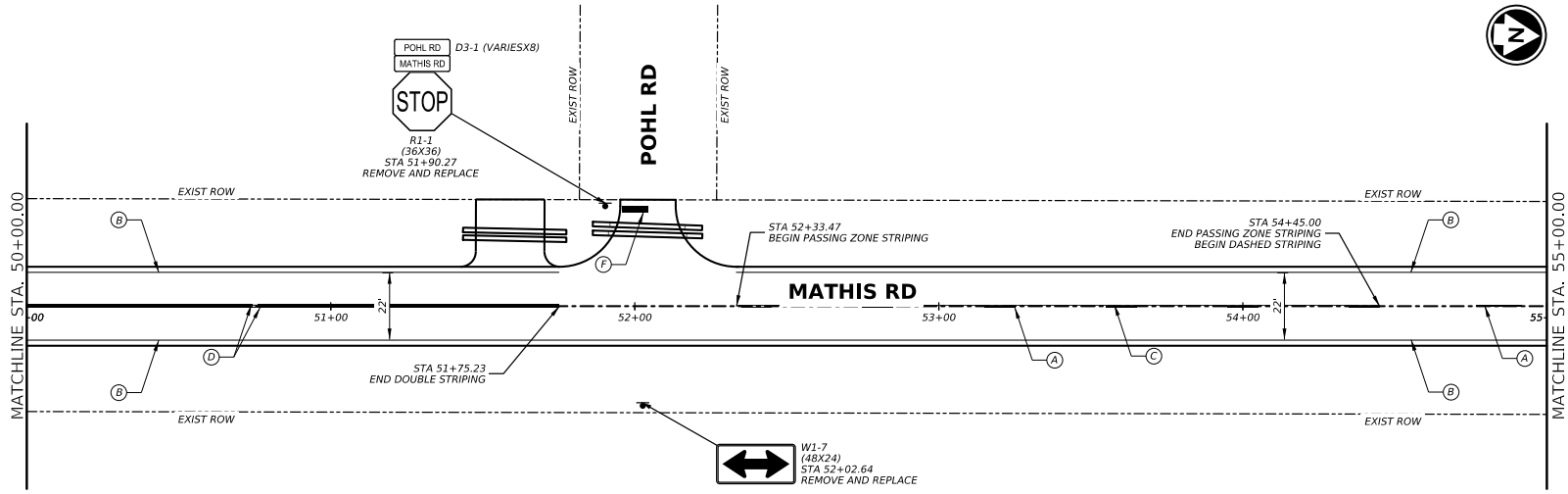

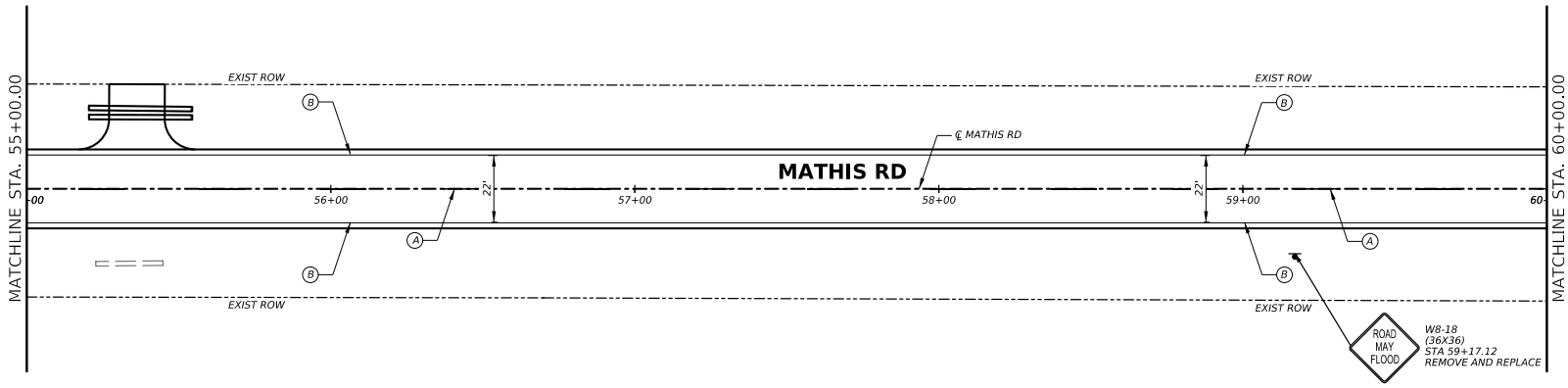

LEGEND

- (A) REFL PAV MRK 4" DASHED YELLOW (TY I)
- (B) REFL PAV MRK 4" SOLID WHITE (TY I)
- (C) REFL PAV MRK 4" SOLID YELLOW (TY I)
- (D) REFL PAV MRK 4" DBL SOLID YELLOW (TY I)
- (F) REFL PAV MRK 24" SOLID WHITE
- PROPOSED SIGN

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/12/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 5 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS WALLER COUNTY

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MATHIS ROAD
SIGNING AND
STRIPING PLAN
STA 50+00 TO STA 60+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		73

DATE: 6/12/2026 9:25:38 AM
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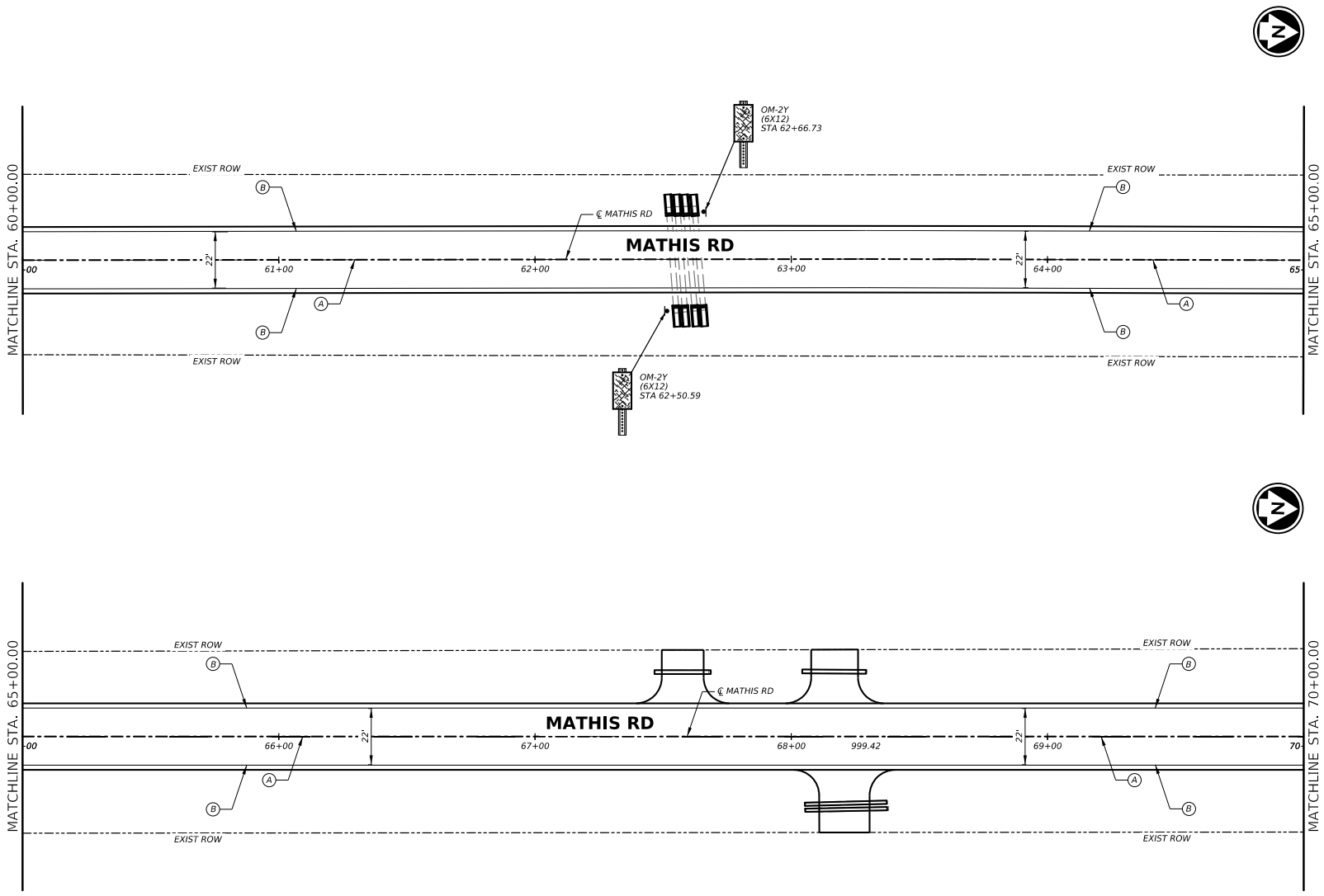

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/12/2026

SHEET 6 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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MATHIS ROAD SIGNING AND STRIPING PLAN STA 60+00 TO STA 70+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		74

DATE: 6/12/2026 9:25:39 AM
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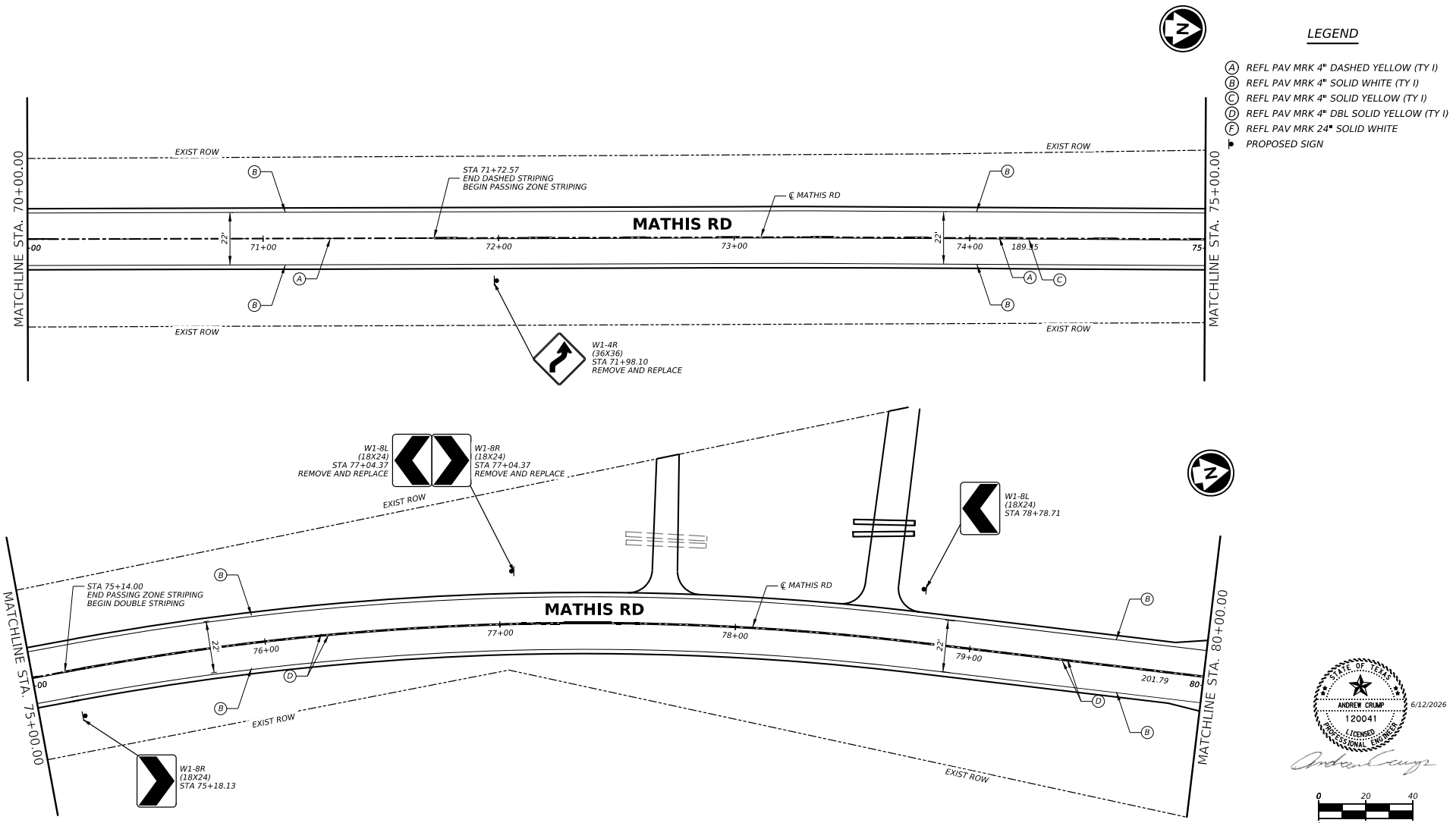

STATE OF TEXAS
ANDREW CRUMP
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6/12/2026

SHEET 7 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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MATHIS ROAD SIGNING AND STRIPING PLAN STA 70+00 TO STA 80+00

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		75

DATE: 6/12/2026 9:25:40 AM
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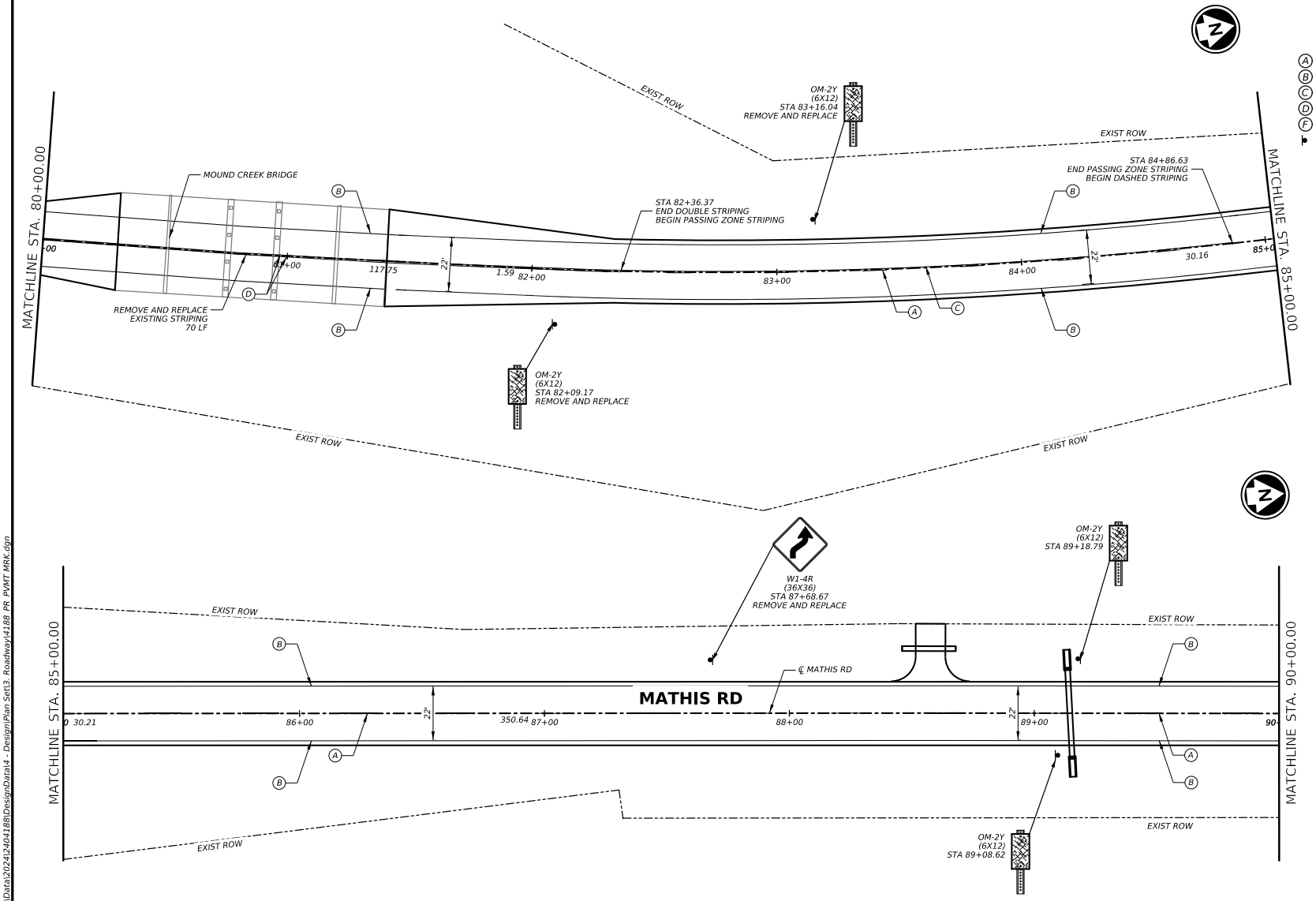

LEGEND

- (A) REFL PAV MRK 4" DASHED YELLOW (TY I)
- (B) REFL PAV MRK 4" SOLID WHITE (TY I)
- (C) REFL PAV MRK 4" SOLID YELLOW (TY I)
- (D) REFL PAV MRK 4" DBL SOLID YELLOW (TY I)
- (F) REFL PAV MRK 24" SOLID WHITE
- PROPOSED SIGN

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/12/2026

SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 8 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
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(713) 965-9996
(713) 965-0044 FAX
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MATHIS ROAD SIGNING AND STRIPING PLAN STA 80+00 TO STA 90+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		76

DATE: 6/12/2026 9:30:02 AM
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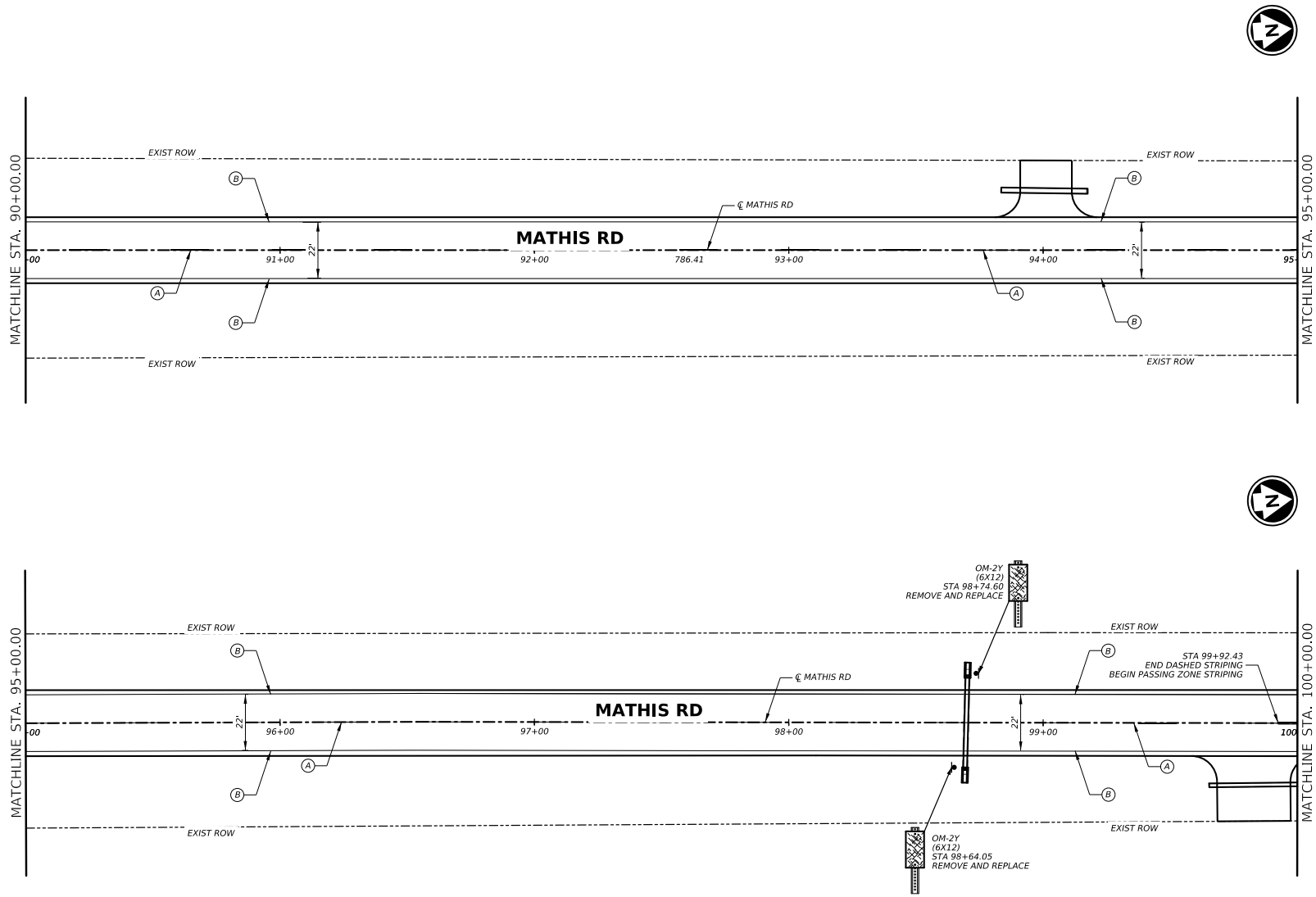

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/12/2026

SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 9 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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MATHIS ROAD SIGNING AND STRIPING PLAN STA 90+00 TO STA 100+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		77

DATE: 6/12/2026 9:25:42 AM
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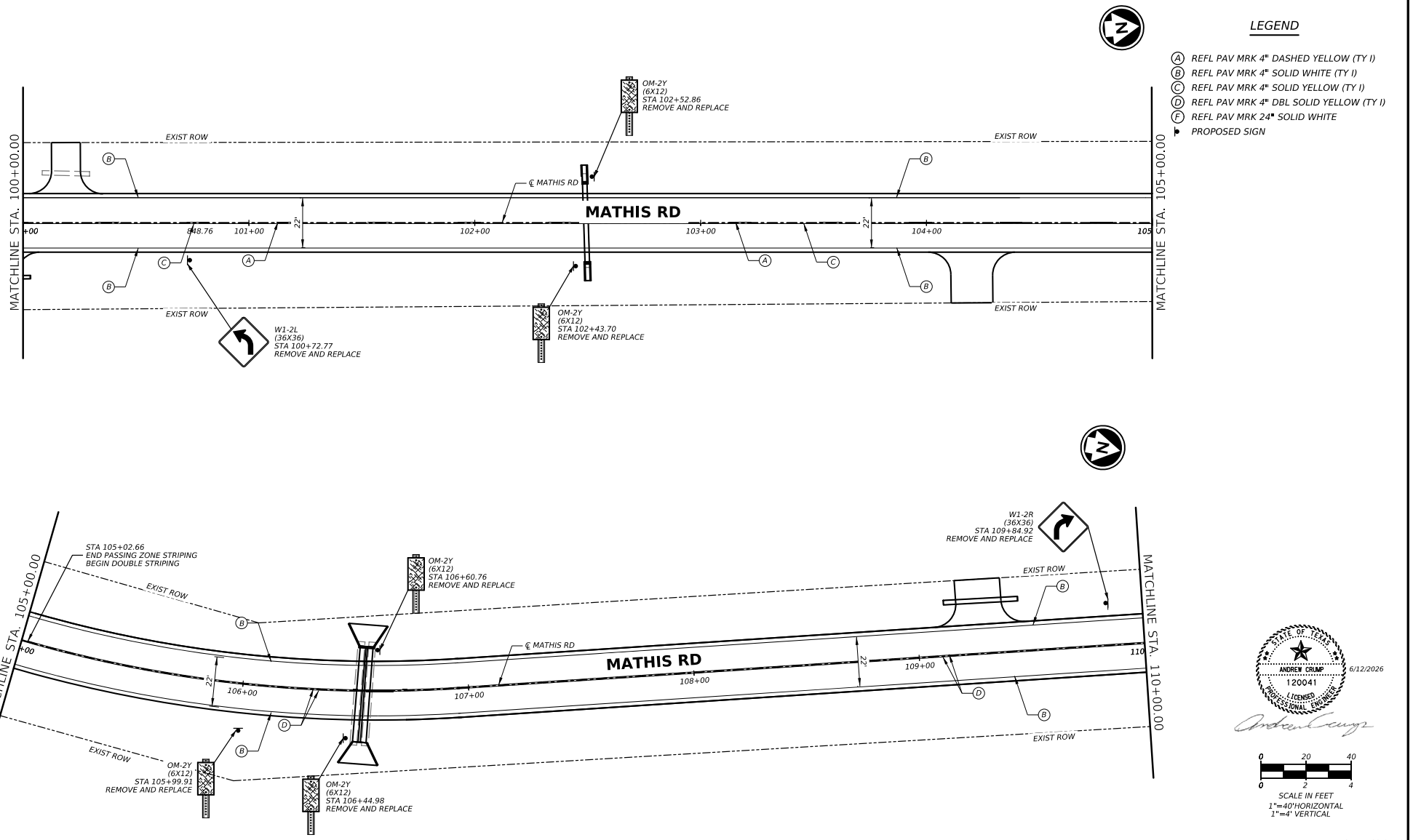

ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
6/12/2026

SHEET 10 OF 12

REV. NO.	DATE	DESCRIPTION	BY

DATE: 6/12/2026 9:25:43 AM
FILE: \\hrgreen.com\hrg\Data\2024\240418\DesignData\4 - DesignPlan Set\3. Roadway\4188 PR PVMT MRK.dgn

WALLER COUNTY ENGINEERING DEPARTMENT

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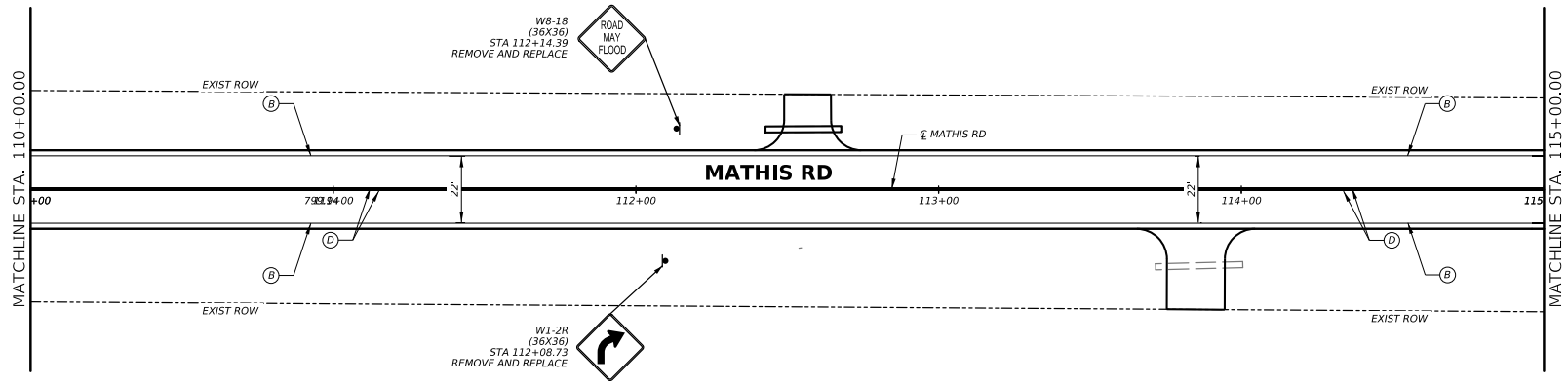
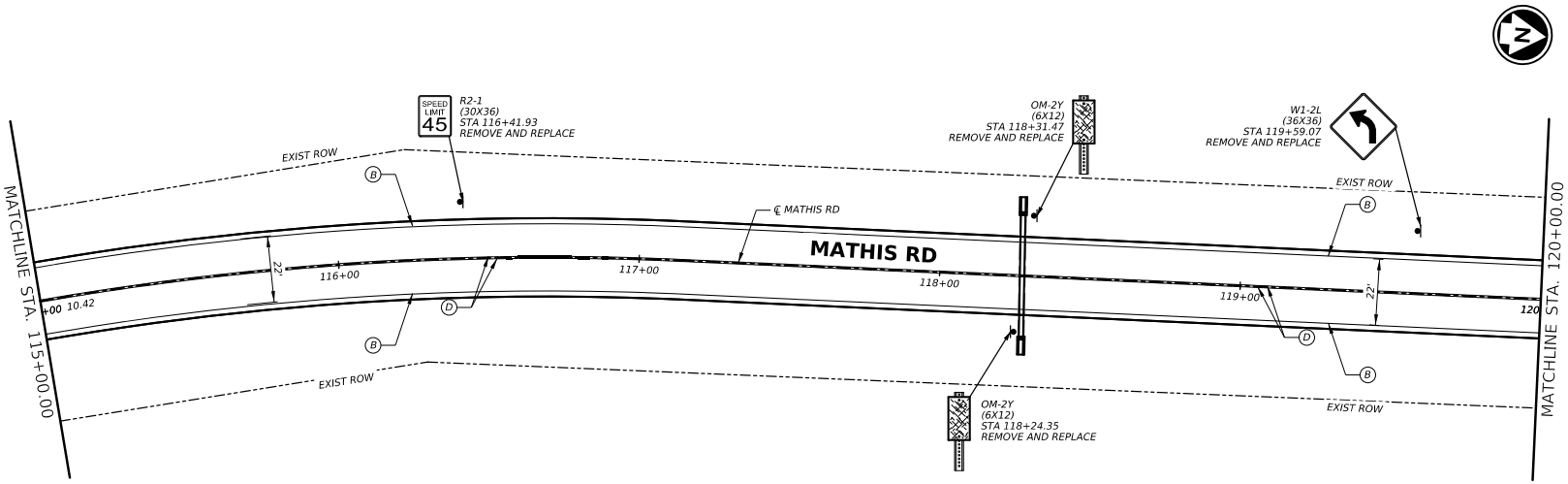
MATHIS ROAD
SIGNING AND
STRIPING PLAN
STA 100+00 TO 110+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		78





LEGEND

- (A) REFL PAV MRK 4" DASHED YELLOW (TY I)
- (B) REFL PAV MRK 4" SOLID WHITE (TY I)
- (C) REFL PAV MRK 4" SOLID YELLOW (TY I)
- (D) REFL PAV MRK 4" DBL SOLID YELLOW (TY I)
- (F) REFL PAV MRK 24" SOLID WHITE
- PROPOSED SIGN

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/12/2026

SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 11 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
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HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD SIGNING AND STRIPING PLAN STA 110+00 TO STA 120+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		79

DATE: 6/12/2026 9:25:44 AM
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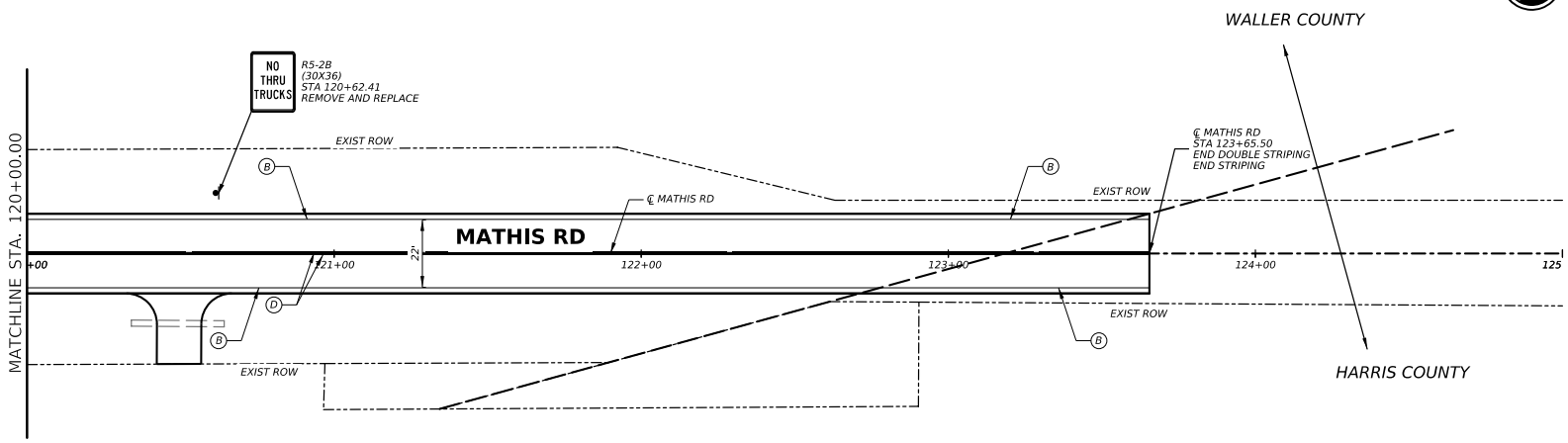

LEGEND

- (A) REFL PAV MRK 4" DASHED YELLOW (TY I)
- (B) REFL PAV MRK 4" SOLID WHITE (TY I)
- (C) REFL PAV MRK 4" SOLID YELLOW (TY I)
- (D) REFL PAV MRK 4" DBL SOLID YELLOW (TY I)
- (F) REFL PAV MRK 24" SOLID WHITE
- PROPOSED SIGN

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/12/2026

0 20 40
0 2 4
SCALE IN FEET
1"=40'HORIZONTAL
1"=4' VERTICAL

SHEET 12 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
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HOUSTON, TX 77042
(713) 965-9996
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MATHIS ROAD SIGNING AND STRIPING PLAN STA 120+00 TO END PROJECT

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		80

DATE: 6/12/2026 9:25:45 AM
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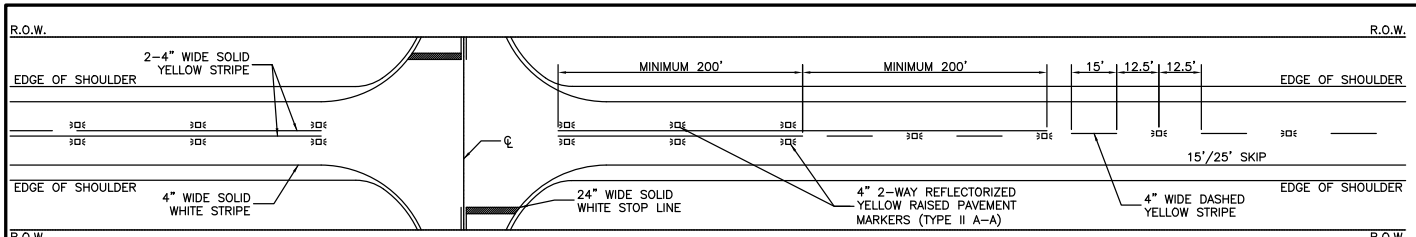
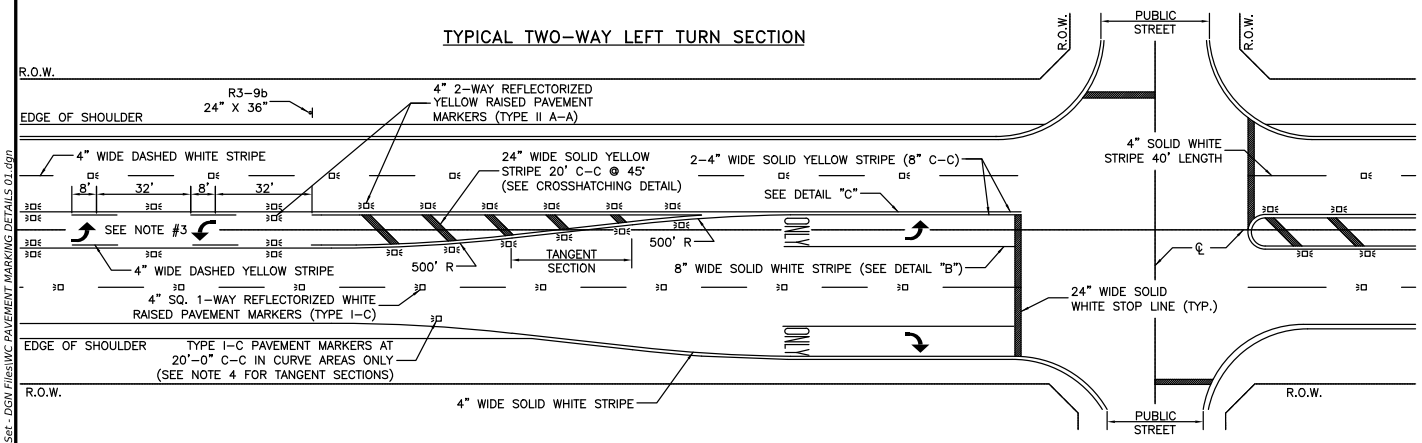
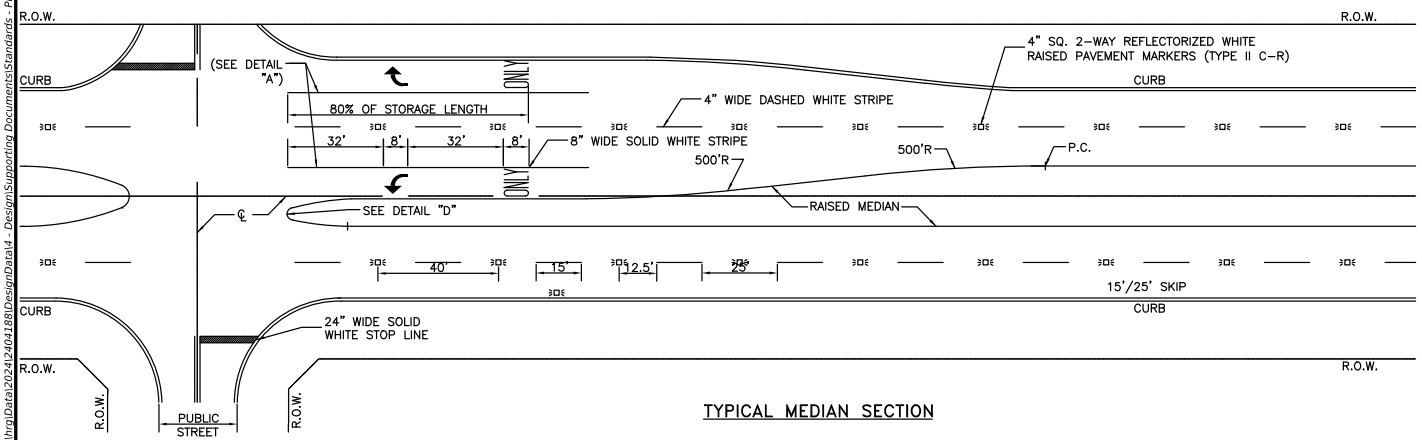


TYPICAL TWO LANE TWO–WAY ROAD



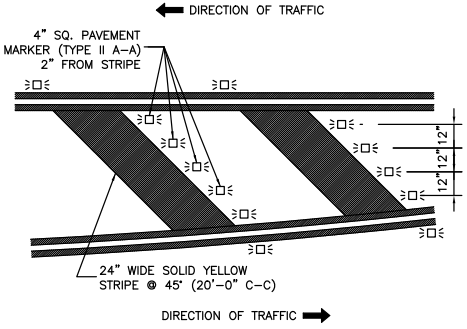


TYPICAL MEDIAN SECTION

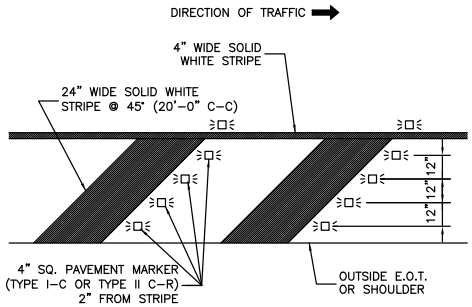
NOTES:

1. ALL PAVEMENT MARKINGS SHALL CONFORM TO THE LATEST EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (TMUTCD).
2. ALL TRAFFIC BUTTONS AND MARKERS SHALL BE INSTALLED ADJACENT TO STRIPES (APPROXIMATELY 2").
3. REPEAT ARROWS AT APPROXIMATELY 1000' INTERVALS WITHIN TWO–WAY LEFT TURN SECTION.
4. WITHIN A TANGENT SECTION THE TYPE I–C PAVEMENT MARKERS SHALL BE PLACED AT 40' C–C ON ROADWAYS WITHOUT CURB AND GUTTERS.
5. WHEN PAVEMENT MARKINGS EXTEND INTO OR CONTINUE THROUGH AN INTERSECTION AREA, THEY SHALL BE THE SAME COLOR AND AT LEAST THE SAME WIDTH AS THE LINE MARKINGS THEY EXTEND.
6. WHEN CROSSWALK MARKINGS ARE USED WITHIN AN ESTABLISHED SCHOOL ZONE, MID–BLOCK, OR AT UNCONTROLLED INTERSECTIONS, CROSSWALK SHALL BE CONTINENTAL STYLE.
7. ADDITIONAL SET OF "WORD" AND "ARROW" PAVEMENT MARKINGS SHALL BE USED WHEN TURN LANE STORAGE LENGTH IS 160 FEET OR GREATER.

CROSSHATCHING DETAIL



OUTSIDE EDGE CROSSHATCHING DETAIL



REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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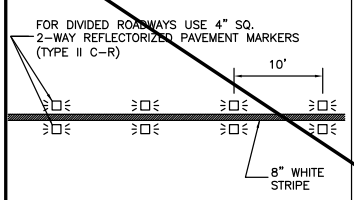
PAVEMENT MARKING DETAILS 01

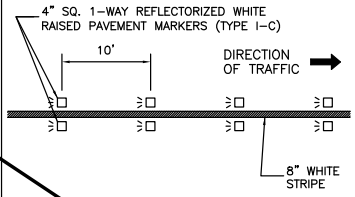
DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		81

DATE: 5/29/2026 10:44:34 AM
FILE: \\hrgreen.com\hrg\Data\2024\24041188\DesignData\4 - Design\Supporting Documents\Standards - Plan Set - DGN Files\WC PAVEMENT MARKING DETAILS 01.dgn

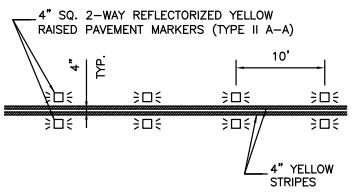
DETAIL "A"
(FOR DIVIDED ROADWAYS)



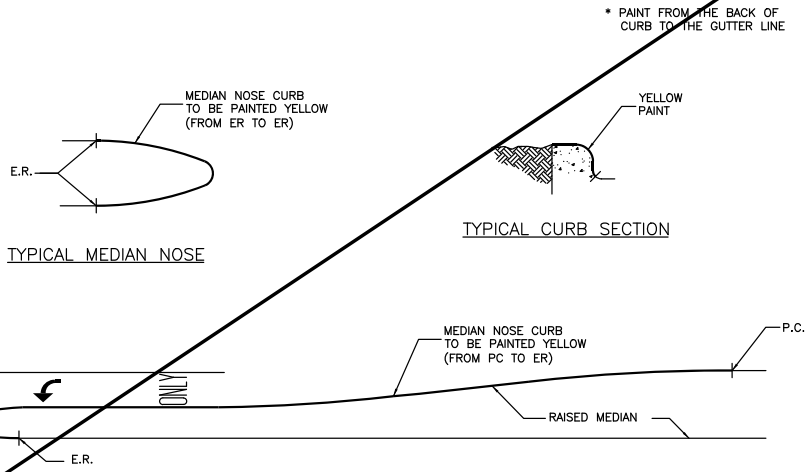
DETAIL "B"
(FOR UNDIVIDED ROADWAYS)



DETAIL "C"



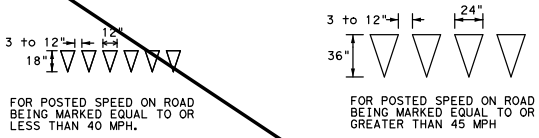
DETAIL "D"



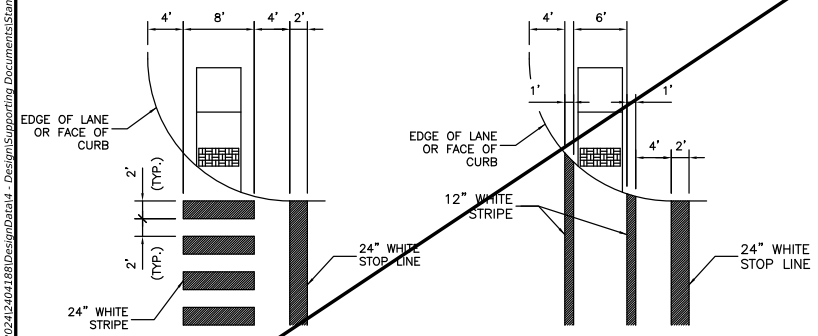
PAVEMENT MARKER LEGEND

SYMBOL	DESCRIPTION
	4" x 4" REFLECTORIZED RAISED PAVEMENT MARKER
	INDICATED DIRECTION OF TRAFFIC FLOW

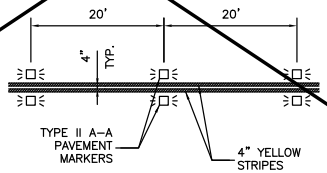
YIELD LINE DETAILS



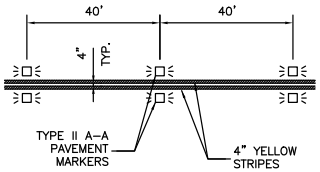
TYPICAL CROSSWALK PLACEMENT



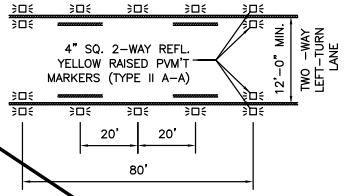
CENTER LINE DETAIL CURVE SECTION



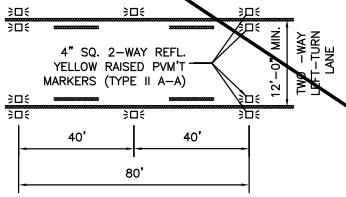
CENTER LINE DETAIL TANGENT SECTION



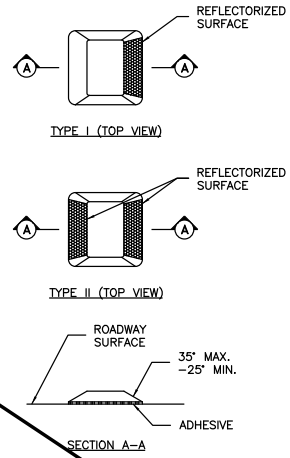
TWO-WAY LEFT TURN CURVE SECTION



TWO-WAY LEFT TURN TANGENT SECTION



RAISED PAVEMENT MARKERS



REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS — WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
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(713) 965-9996
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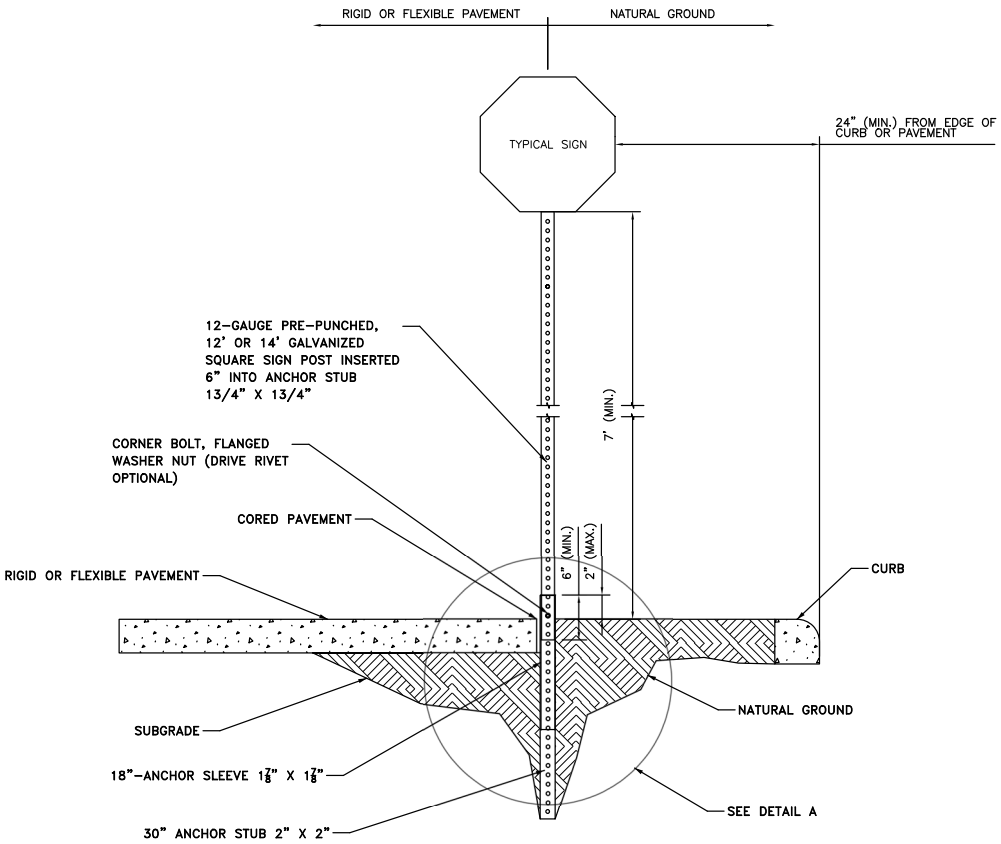
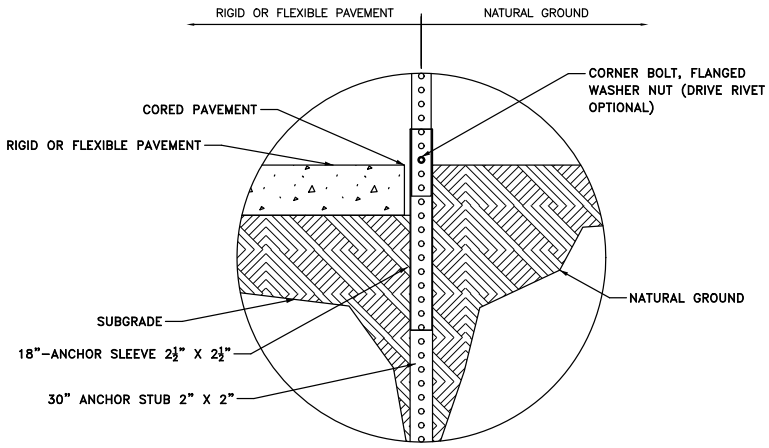
HRGreen.com
Firm No. F-11278

PAVEMENT MARKING DETAILS 02

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		82

DATE: 5/29/2026 10:44:35 AM
FILE: \\hrgreen.com\hrg\Data\2024\24041881\DesignData\4 - Design\Supporting Documents\Standards - Plan Set - DGN Files\WC PAVEMENT MARKING DETAILS 02.dgn





TYPICAL GROUND SIGN INSTALLATION
DETAIL A

NOTES:

1. THE CROSS SECTION OF ALL MEMBERS SHALL BE SQUARE TUBE FORMED OF 12 GAUGE AND MANUFACTURED FROM HOT-GALVANIZED STEEL
2. THE TELESCOPE BREAKAWAY SYSTEM OR "SYSTEM" IS DEFINED AS FOLLOW:
   - A MINIMUM 30" ANCHOR STUB;
   - 18" ANCHOR SLEEVE.
3. DRIVE THE SYSTEM TOGETHER MAKING SURE THE HOLES ARE ALIGNED.
4. THE SYSTEM IS TO BE DRIVEN INTO NATURAL GROUND EXPOSED SUBGRADE UNTIL ONLY 1 TO 2 INCHES ARE LEFT EXPOSED.
5. ATTACH THE SIGN TO AN 1 3/4" SQUARE POST AT THE DESIRED HEIGHT, SUCH THAT IT MEETS THE MINIMUM VERTICAL CLEARANCE.
6. SIGNS ARE FASTENED TO THE POST BY USING DRIVE RIVETS OR BOLTS.
7. INSERT THE SIGN POST APPROXIMATELY 6 TO 8 INCHES INTO THE ANCHOR BASE.
8. BOLT THE SIGN POST TO THE ANCHOR ASSEMBLY WITH A CORNER BOLT.
9. WHEN INSTALLING IN RIGID OR FLEXIBLE PAVEMENT, USE A CORING MACHINE TO EXPOSE THE SUBGRADE MATERIAL AND INSTALL THE SYSTEM.

DATE: 5/29/2026 10:44:36 AM
FILE: \\hrgreen.com\hrg\Data\2024\240418\8\DesignData\4 - Design\Supporting Documents\Standards - Plan Set - DGN Files\WC TYPICAL GROUND SIGN INSTALLATION.dgn

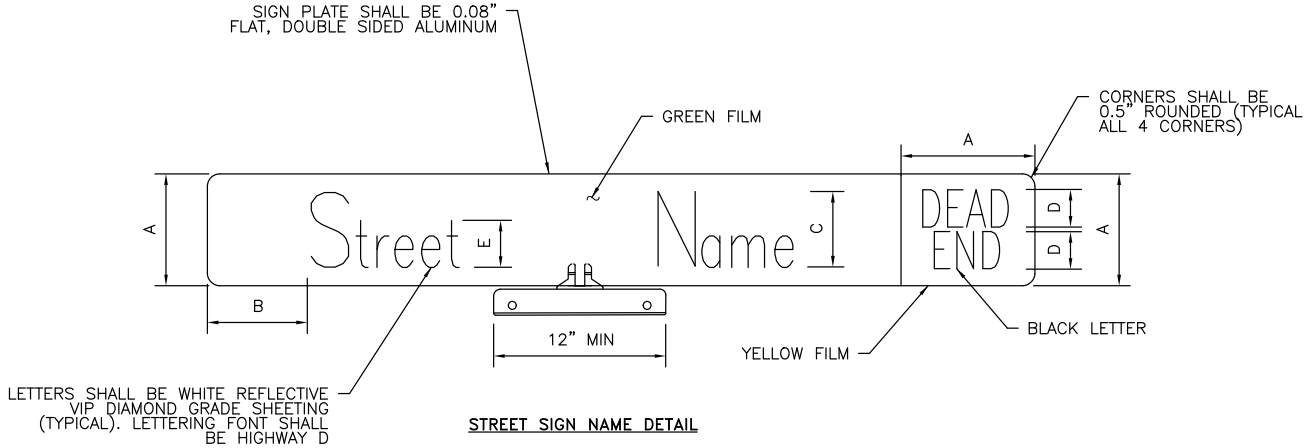
REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY
ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

TYPICAL GROUND SIGN INSTALLATION

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		83



STREET SIGN NAME DETAIL

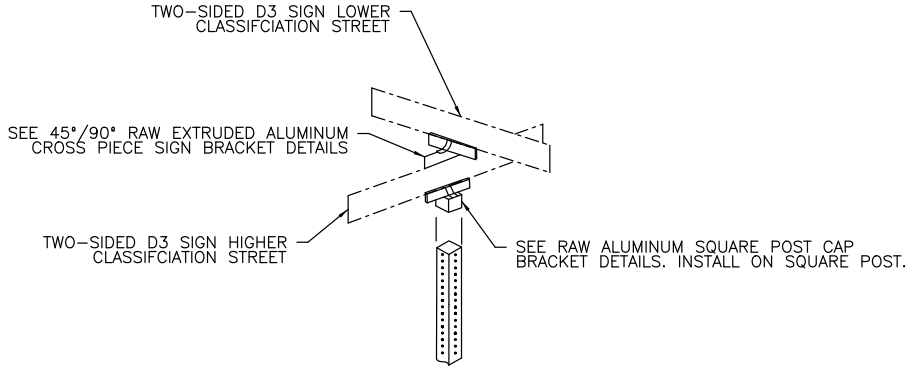
DIMENSION SCHEDULE

9" SIGN

'A'	9"
'B'	2"
'C'	6"
'D'	3.5"
'E'	4.5"

NOTES:

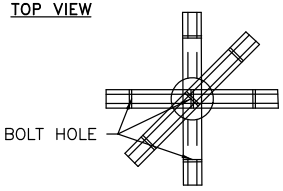
ALL STREET BLADES SHALL BE 9" IN HEIGHT



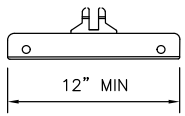
DUAL SIDED STREET SIGN DETAIL

45°/90° RAW EXTRUDED ALUMINUM CROSS PIECE SIGN BRACKET DETAILS

TOP VIEW

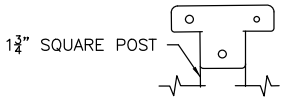


SIDE VIEW



RAW ALUMINUM SQUARE POST CAP BRACKET DETAILS

FRONT VIEW



SIDE VIEW

DATE: 5/29/2026 10:44:36 AM
FILE: \\hrgreen.com\hrg\Data\2024\2404188\DesignData\4 - Design\Supporting Documents\Standards - Plan Set - DGN Files\WC STREET SIGN NAME AND INSTALLATION DETAIL.dgn

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY
ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

STREET SIGN NAME AND INSTALLATION DETAIL

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		84

DATE:
FILE:

DELINEATOR - BID ITEM DESCRIPTIONS

XXXXX DEL ASSM(D-XX)SZ X (XXXX)XXXXX(XX)

PAYMENT
INSTL = Installation
REPLC = Replacement

NUMBER OF REFLECTORS
S = Single
D = Double

COLOR OF REFLECTORS
W = White
Y = Yellow
R = Red

REFLECTOR UNIT SIZE
SZ 1 or SZ 2 or SZ 5 or SZ 6

TYPE OF POST OR DELINEATOR
WC = Wing Channel Post
YFLX = Yellow Flexible Post
WFLX = White Flexible Post
BRF = Barrier Reflector

TYPE OF MOUNT
GND = Ground Embedded (drivable or set in concrete)
CAB1 or CAB2 or CAB3 = Cable Barrier
CTB = Concrete Traffic Barrier
GF1 or GF2 = Guard Fence
SRF = Surface Mount

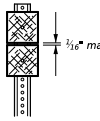
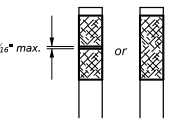
IDENTIFICATION
LL = Low Speed, Low Impact
HH = High Speed, High Impact

DIRECTION [if required]
BI = Bi-Directional
BR = Bi-Directional with red on back

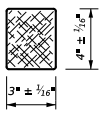
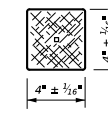
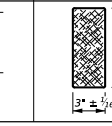
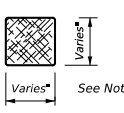
DELINEATOR DEFINITION

Retroreflective devices mounted on the roadway surface or at the side of the roadway in a series to indicate the alignment of the roadway, especially at night or in adverse weather. (See TMUTCD - Part 3, DELINEATORS.)

SINGLE AND DOUBLE MOUNTED DELINEATORS

	SINGLE		DOUBLE	
DEVICE	 1-Size 2 reflector unit	 1-Size 1 reflector unit	 2-Size 2 reflector units	 2-Size 1 reflector units or 1-Size 5 reflector unit
POST TYPE	WC	YFLX, WFLX	WC	YFLX, WFLX
MOUNT TYPE	GNDLL	GNDLL, GNDHH, SRFLL, SRFHH	GNDLL	GNDLL, GNDHH, SRFLL, SRFHH

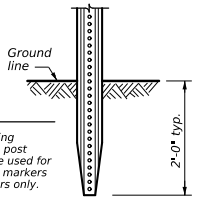
REFLECTOR UNIT DIMENSIONS FOR DELINEATORS

	SIZE 1	SIZE 2	SIZE 5	SIZE 6
DEVICE				 See Note 3
SHEETING	Yellow, White, or Red Type B or C reflective sheeting			

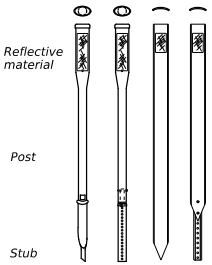
NOTES
1. Size 1 and 5 - Direct applied reflective sheeting for use on flexible post (flx).
2. Size 2 - For use on wing channel (wc) post only. Use approved metal, plastic, or fiberglass backplate with $^{17}/_{64}$" mounting holes.
3. Size 6 - For use on cable barrier systems only. Direct applied reflective sheeting. Various dimensions as specified elsewhere in the plans or as defined by the manufacturer.

POST TYPE AND SUPPORT FOUNDATION DETAILS

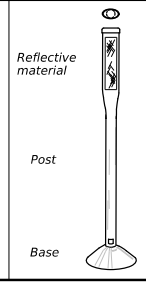
WING CHANNEL (WC) — GND



FLEXIBLE POSTS (YFLX, WFLX) — GND



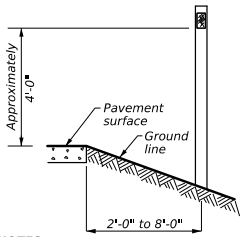
SRF



NOTES
1. See "Flexible Delineator and Object Marker Posts" Material Producer List for approved devices.
2. Install per manufacturer's recommendations.
3. Post length may vary to meet field conditions.

NOTES
1. Embedded Wing Channel (WC) post option may be used for Type 2 object markers and delineators only.
2. 1.12 lbs/ft steel per ASTM A 1011 SS Gr.50, or ASTM A499.

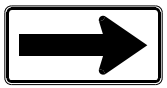
DELINEATOR - TYPICAL INSTALLATION



CHEVRONS

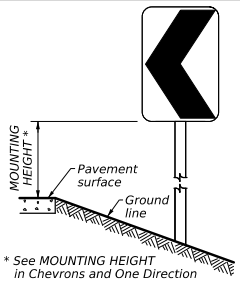
DEVICE				
	W1-8			
SIZE (W x L)	18"x 24" (Conventional)	24"x 30" (Conventional oversize)	30"x 36" (Expressway)	36" x 48" (Freeway)
MOUNTING HEIGHT	4'-0" to 4'-6" or 7'-0" to 7'-6"		7'-0" to 7'-6"	

ONE DIRECTION LARGE ARROW

DEVICE		
	W1-6	
SIZE (W x L)	48"x 24" (Conventional)	60" x 30" (Expressway & Freeway)
MOUNTING HEIGHT	7'-0" to 7'-6"	

NOTES
1. Chevron Alignment (W1-8) signs and One-Direction Large Arrow (W1-6) signs shall be installed per Sign Mounting Details (SMD) Standard Sheets and paid under Item 644 (Small Roadside Sign Assemblies).
2. When there is a need to increase conspicuity, a larger One-Direction Large Arrow (W1-9T) sign may be used in lieu of the typical W1-6 sign.

CHEVRONS AND ONE DIRECTION LARGE ARROW SIGNS TYPICAL INSTALLATION



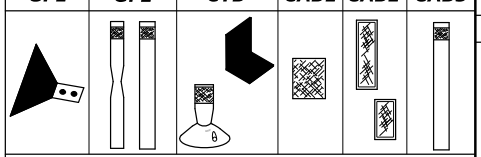
* See MOUNTING HEIGHT in Chevrons and One Direction Large Arrow tables.

GENERAL NOTES
1. Place delineators on a section of roadway at a consistent distance from the edge of pavement.
2. When delineators are more than 8'-0" from the edge of the pavement, it may not be possible to maintain a height of approximately 4'-0". If this is the case, place the delineator as close to the desired height as possible.
3. Install all delineators and barrier reflectors in accordance with the manufacturer's recommendation.
4. GF1, GF2, and CTB barrier reflectors should be installed a minimum of 18 inches above the edge of the pavement surface.
5. When using yellow delineators with flexible posts to separate opposing direction of travel, such as centerline or median use, the flexible posts shall be yellow.
6. Delineator substrates and sign substrates shall be 0.080" aluminum sign blank and confrom to ASTM B-209 Alloy 6061-T6 or an approved alternative.

DEPARTMENTAL MATERIAL SPECIFICATIONS

FLEXIBLE DELINEATOR & OBJECT MARKER POSTS (EMBEDDED & SURFACE MOUNT TYPES)	DMS-4400
SIGN FACE MATERIALS	DMS-8300
DELINEATORS, OBJECT MARKERS AND BARRIER REFLECTORS	DMS-8600

BARRIER REFLECTORS (BRF)

	GF1	GF2	CTB	CAB1	CAB2	CAB3
DEVICE						

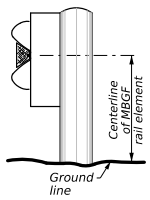
1. Barrier reflectors shall meet the requirements of DMS-8600.
2. Approved barrier reflectors are listed on the "Barrier Reflectors" Material Producer List at: www.txdot.gov.
3. GF2 and CAB3 are coded as "YFLX" or "WFLX" instead of "BRF".
4. CAB1, CAB2, and CAB3 are only to be used as replacements. Per Item 543, original installation is to be considered subsidiary to the Cable Barrier System.

SHEETING	Yellow, White, Red
NOTE	1. Reflective sheeting shall have a minimum dimension of 3 inches by 3 inches and minimum surface area of 9 square inches.

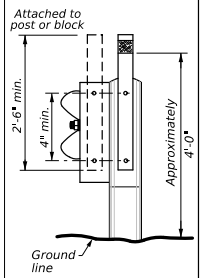
BARRIER MOUNT TYPES

GUARD FENCE

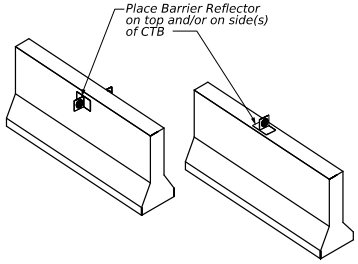
GF1



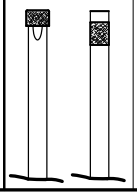
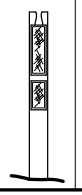
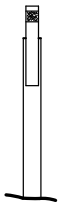
GF2



CONCRETE TRAFFIC BARRIER (CTB)



CABLE BARRIER

CAB1	CAB2	CAB3
		

Texas Department of Transportation — Traffic Safety Division Standard

DELINEATOR MATERIAL DESCRIPTION & INSTALLATION

D & OM(1)-25

FILE: dom1-25.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	
©TxDOT May 2025	CONT	SECT	JOB	HIGHWAY	
REVISIONS					
8-04 3-15	DIST	COUNTY		SHEET NO.	
10-09 7-20					
4-10 5-25				85	

20A

OBJECT MARKER - BID ITEM DESCRIPTIONS

XXXXX OM ASSM(OM-XX)(XXXX)XXXXX(XX)

PAYMENT
- INSTL = Installation
- REPLC = Replacement

TYPE OF OBJECT MARKER
- 1, 2, 3, or 4

NUMBER OF REFLECTORS OR DIRECTION
- X = 3-Size 2 reflector units (Type 2 only)
- Y = 1-Size 3 reflector unit (Type 2 only)
- Z = 3-Size 1 or 1-Size 4 reflector unit(s)(Type 2 only)
- L = Left Side (Type 3 Object Marker only)
- R = Right Side (Type 3 Object Marker only)
- C = Center (Type 3 Object Marker only)

TYPE OF POST
- WC = Wing Channel Post
- WFLX = White Flexible Post
- YFLX = Yellow Flexible Post
- TWT = Thin Walled Tubing

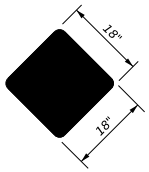
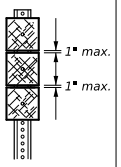
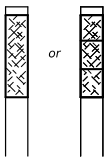
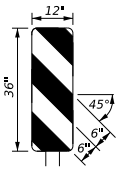
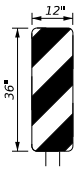
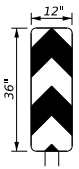
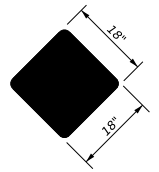
TYPE OF MOUNT
- GND = Ground Embedded (drivable or set in concrete)
- SRF = Surface Mount
- WAS = Wedge Anchor Steel
- WAP = Wedge Anchor Plastic

IDENTIFICATION
- LL = Low Speed, Low Impact
- HH = High Speed, High Impact

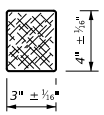
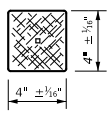
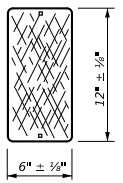
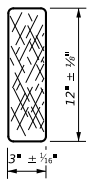
DIRECTION [if required]
- BI = Bi-Directional

OBJECT MARKER DEFINITION

Devices used to mark obstructions within or adjacent to the roadway. (See TMUTCD - Chapter 2C, WARNING SIGNS AND OBJECT MARKERS.)

	Type 1 (OM-1)	Type 2 (OM-2)			Type 3 (OM-3)			Type 4 (OM-4)
	OM-1	OM-2X	OM-2Y	OM-2Z	OM-3L	OM-3R	OM-3C	OM-4
DEVICE		 3-Size 2 reflector units	 1-Size 3 reflector unit	 1-Size 4 reflector unit or 3-Size 1 reflector units				
SHEETING	Yellow - Type B_{FL} or C_{FL} sheeting	White and Yellow - Type B or C sheeting			Alternating Acrylic Black and Retroflective Yellow - Type B_{FL} or C_{FL} sheeting			Red - Type B_{FL} or C_{FL} sheeting
POST TYPE	TWT	WC	WC	WFLX, YFLX	TWT, WFLX			TWT
MOUNT TYPE	WAS, WAP	GNDLL	GNDLL	GNDLL, GNDHH, SRFLL, SRFHH	WAS, WAP, GNDLL, GNDHH, SRFLL, SRFHH			WAS, WAP

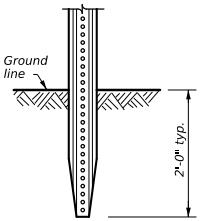
REFLECTOR UNIT DIMENSIONS FOR OBJECT MARKERS

	SIZE 1	SIZE 2	SIZE 3	SIZE 4
DEVICE				
NOTE	1. Size 1 and 4 - Direct applied reflective sheeting for use on flexible post (flx). 2. Size 2 and 3 - For use on wing channel (wc) post only. Use approved metal, plastic, or fiberglass backplate with 17/64" mounting holes.			

POST TYPE AND SUPPORT FOUNDATION DETAILS

WING CHANNEL (WC)

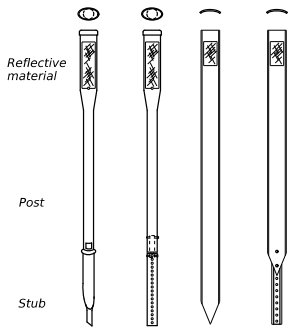
GND



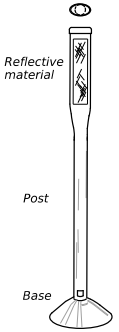
NOTES
1. Embedded Wing Channel (WC) post option may be used for Type 2 object markers and delineators only.
2. 1.12 lbs/ft steel per ASTM A 1011 SS Gr. 50, or ASTM A499.

FLEXIBLE POSTS (YFLX, WFLX)

GND



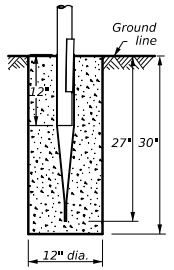
SRF



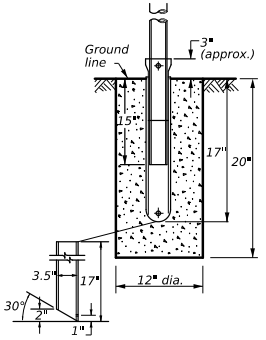
NOTES
1. See "Flexible Delineator and Object Marker Posts" Material Producer List for approved devices.
2. Install per manufacturer's recommendations.
3. Post length may vary to meet field conditions.

WEDGE ANCHOR SYSTEMS

WAS

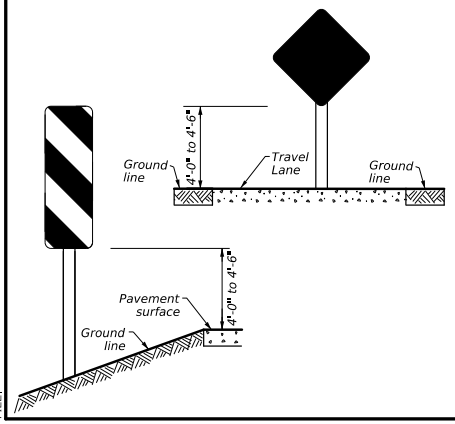


WAP

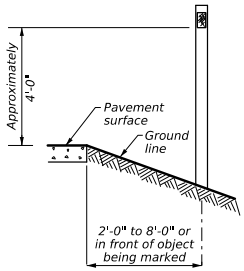


NOTE
1. Install per manufacturer's recommendations.

TYPES 1, 3, AND 4 OBJECT MARKERS TYPICAL INSTALLATION



TYPE 2 OBJECT MARKERS TYPICAL INSTALLATION



See General Notes 1, 2, and 3

GENERAL NOTES
1. Where a restriction prevents consistent placement from the pavement edge, place the affected object markers in line with the innermost edge of the obstruction.
2. When Type 2 object markers are more than 8'-0" from the edge of the pavement, it may not be possible to maintain a height of approximately 4'-0". If this is the case, place the object marker as close to the recommended height as possible.
3. Install all object markers in accordance with the manufacturer's recommendation.
4. Diagonal stripes on Type 3 object markers shall slope down toward the intended travel lane.
5. Object marker substrates shall be 0.080" aluminum sign blank and conform to ASTM B-209 Alloy 6061-T6 or an approved alternative.

DEPARTMENTAL MATERIAL SPECIFICATIONS	
FLEXIBLE DELINEATOR & OBJECT MARKER POSTS (EMBEDDED & SURFACE MOUNT TYPES)	DMS-4400
SIGN FACE MATERIALS	DMS-8300
DELINEATORS, OBJECT MARKERS AND BARRIER REFLECTORS	DMS-8600

Texas Department of Transportation

Traffic Safety Division Standard

OBJECT MARKER MATERIAL DESCRIPTION & INSTALLATION

D & OM(2)-25

FILE: dom2-25.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS 8-04 5-25 3-13 7-20	DIST	COUNTY		SHEET NO. 86

20B

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DELINEATOR AND OBJECT MARKER APPLICATION AND SPACING

CONDITION	REQUIRED TREATMENT	MINIMUM SPACING
Fwy./Exp. Tangent	RPMs	See PM and FPM standard sheets
Fwy./Exp. Curve	Single delineators on right side	See delineator spacing table
Fwy/Exp.Ramp	Single delineators on at least one side of ramp (should be on outside of curves) (see Detail 4a on D&OM(4))	100 feet on ramp tangents Use delineator spacing table for ramp curves ("straightway spacing" does not apply to ramp curves)
Acceleration/ Deceleration Lane	Double delineators (see Detail 4a on D&OM(4))	100 feet (See Detail 4a on D & OM(4))
Truck Escape Ramp	Single red delineators on both sides	50 feet
Bridge Rail (steel or concrete) and Metal Beam Guard Fence	Bi-Directional Delineators when undivided with one lane each direction Single Delineators when multiple lanes each direction	Equal spacing (100'max) but not less than 3 delineators
Concrete Traffic Barrier (CTB) or Steel Traffic Barrier	Barrier reflectors matching the color of the edge line	Equal spacing 100' max
Cable Barrier	Reflectors matching the color of the edge line Bi-Directional Delineators when within clearzone	Every 5th cable barrier post (up to 100'max)
Cable Barrier Terminus / Impact Head	Object marker on end	Requires reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end See D & OM(6)
Guard Rail Terminus / Impact Head	Divided highway - Object marker on approach end Undivided 2-lane highways - Object marker on approach and departure end	Requires reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end See D & OM(5) and D & OM(6)
Bridges with no Approach Rail	Type 3 Object Marker (OM-3) at end of rail and 3 single delineators approaching rail	See D & OM(5)
Reduced Width Approaches to Bridge Rail	Type 2 and Type 3 Object Markers (OM-3) and 3 single delineators approaching bridge	Requires reflective sheeting provided by manufacturer per D & OM(VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end See D & OM(5)
Culverts without MBGF	Type 2 Object Markers	See Detail 2 on D & OM(4)
Crossovers	Double yellow delineators and RPMs	See Detail 1 on D & OM(4)
Pavement Narrowing (lane merge) on Freeways/Expressway	Single delineators adjacent to affected lane for full length of transition	100 feet

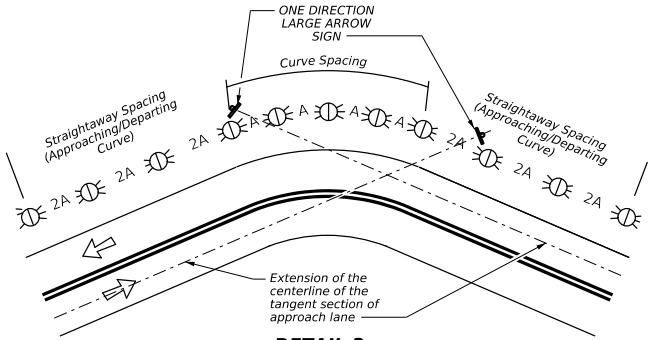
MINIMUM WARNING DEVICES AT CURVES WITH ADVISORY SPEEDS

Amount by which Advisory Speed is less than Posted Speed	Turn/Curve Advisory Speed: Turn (30 MPH or less)	Turn/Curve Advisory Speed: Curve (35 MPH or more)
5 MPH	• RPMs and Pavement Markings	
10 MPH	• Advance Horizontal Alignment Warning Sign with Advisory Speed Plaque; and • RPMs and Pavement Markings	
15 MPH	• Advance Horizontal Alignment Warning Sign with Advisory Speed Plaque; and • RPMs, Pavement Markings, and Delineators; or • RPMs, Pavement Markings, and One Direction Large Arrow sign(s)	• Advance Horizontal Alignment Warning Sign with Advisory Speed Plaque; and • RPMs, Pavement Markings, and Chevrons; or • RPMs, Pavement Markings, and One Direction Large Arrow sign(s) where geometric conditions or roadside obstacles prevent the installation of chevrons
20 MPH	• Advance Horizontal Alignment Warning Sign with Advisory Speed Plaque; and • RPMs, Pavement Markings, and Chevrons; or • RPMs, Pavement Markings, and One Direction Large Arrow sign(s) where geometric conditions or roadside obstacles prevent the installation of chevrons	
25 MPH or more	• Advance Horizontal Alignment Warning Sign with Advisory Speed Plaque; and • RPMs, Pavement Markings, and Chevrons; or • RPMs, Pavement Markings, and One Direction Large Arrow sign(s) where geometric conditions or roadside obstacles prevent the installation of chevrons	• Advance Horizontal Alignment Warning Sign with Advisory Speed Plaque; and • RPMs, Pavement Markings, and Chevrons

NOTE

A roadway is considered to have pavement markings when either a center line, edge lines, or both are present. A roadway is considered to have RPMs when they are used to supplement centerline pavement markings.

SUGGESTED SPACING FOR DELINEATORS ON HORIZONTAL CURVES



DETAIL 3a

NOTE

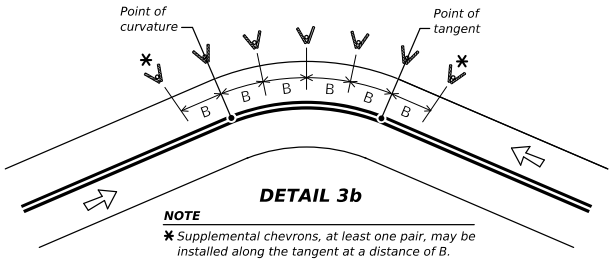
ONE DIRECTION LARGE ARROW (W1-6) sign should be located at approximately and perpendicular to the extension of the centerline of the tangent section of approach lane.

LEGEND	
	Delineator
	Bi-directional Delineator
	Sign

GENERAL NOTES

1. Unless otherwise indicated, the delineator or barrier reflector color shall conform to the color of the pavement edge line on the side of the road where the delineators or barrier reflectors are placed.
2. Barrier reflectors may be used to replace required delineators.
3. Single red delineators may be mounted on the back side of delineator posts for wrong way driver applications.

SUGGESTED SPACING FOR CHEVRONS ON HORIZONTAL CURVES



DETAIL 3b

NOTE

✱ Supplemental chevrons, at least one pair, may be installed along the tangent at a distance of B. Adverse curve aligment is a factor in determining if supplemental chevrons are needed.

DELINEATOR AND CHEVRON SPACING

WHEN DEGREE OF CURVE OR RADIUS IS KNOWN

Degree of Curve	FEET: Radius of Curve	Spacing in Curve	Spacing in Straightaway	Chevron Spacing in Curve
		A	2A	B
1	5730	225	450	—
2	2865	160	320	—
3	1910	130	260	200
4	1433	110	220	160
5	1146	100	200	160
6	955	90	180	160
7	819	85	170	160
8	716	75	150	160
9	637	75	150	120
10	573	70	140	120
11	521	65	130	120
12	478	60	120	120
13	441	60	120	120
14	409	55	110	80
15	382	55	110	80
16	358	55	110	80
19	302	50	100	80
23	249	40	80	80
29	198	35	70	40
38	151	30	60	40
57	101	20	40	40

Curve delineator approach and departure spacing should include 3 delineators spaced at 2A. This spacing should be used during design preparation or when the degree of curve is known.

DELINEATOR AND CHEVRON SPACING

WHEN DEGREE OF CURVE OR RADIUS IS NOT KNOWN

Advisory Speed (MPH)	FEET: Spacing in Curve	Spacing in Straightaway	Chevron Spacing in Curve
	A	2A	B
65	130	260	200
60	110	220	160
55	100	200	160
50	85	170	160
45	75	150	120
40	70	140	120
35	60	120	120
30	55	110	80
25	50	100	80
20	40	80	80
15	35	70	40

If the degree of curve is not known, delineator spacing may be determined based on the Advisory Speed of the curve. Use the delineator curve spacing for each Advisory Speed (MPH).

Texas Department of Transportation

Traffic Safety Division Standard

DELINEATOR & OBJECT MARKER PLACEMENT DETAILS APPLICATION & SPACING D & OM(3)-25

FILE: dom3-25.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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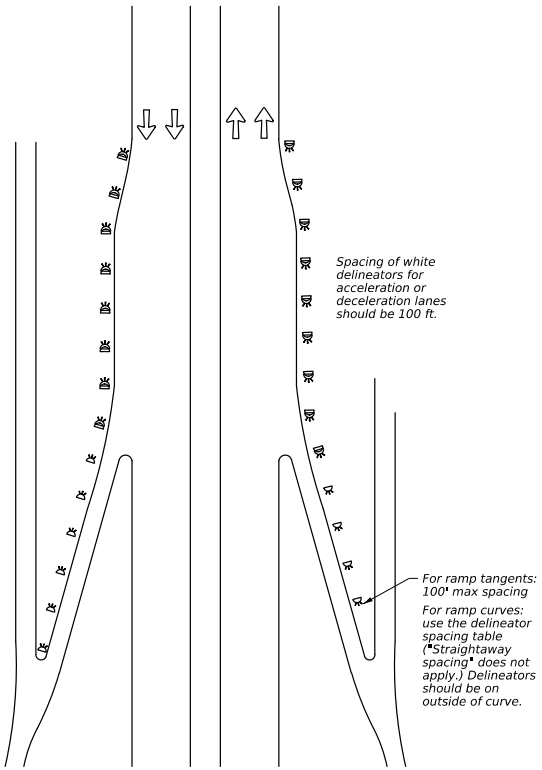
REVISIONS				
8-04 7-20 3-15 5-23 8-15	DIST	COUNTY		SHEET NO. 87

20C

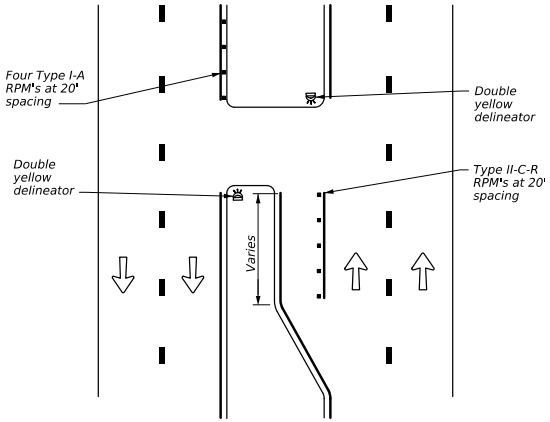
DATE:
FILE:

FREEWAY DELINEATION FOR RAMPS AND ACCELERATION / DECELERATION LANES



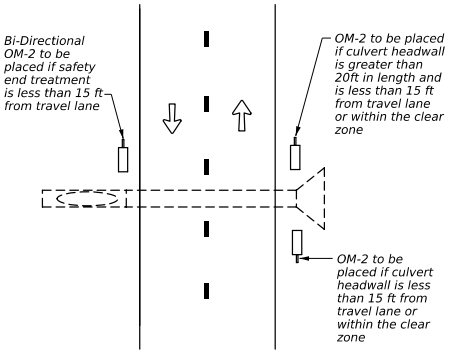
DETAIL 4a

CROSSOVERS



DETAIL 4b

FOR CULVERTS WITHOUT METAL BEAM GUARD FENCE (MBGF)

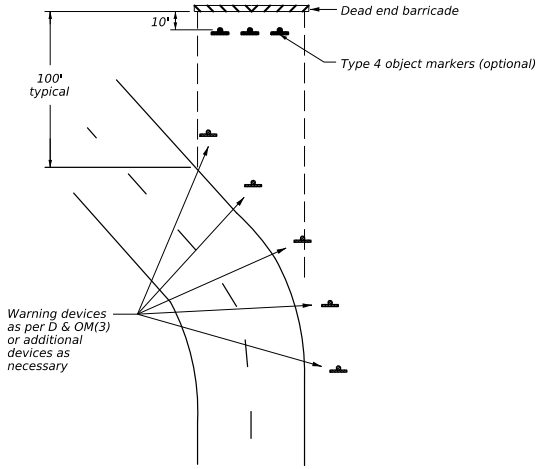


DETAIL 4c

NOTES

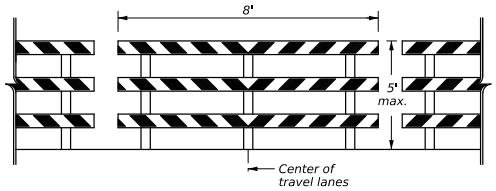
1. *This detail applies for all existing culverts without MBGF, for application of OMs. New bridge-class culverts require safety end treatments, MBGF, or bridge railing. See the TxDOT Bridge Railing Manual.*
2. *For culverts with MBGF, see Sheet 5.*

TYPICAL APPLICATION OF DEAD END BARRICADE



DETAIL 4d

TYPICAL DEAD END BARRICADE INSTALLATION



DETAIL 4e

NOTES

1. *Barricade striping shall be red and white reflective sheeting for all permanent road closures.*
2. *Barricade striping is red and white sloping toward the center of the roadway.*
3. *Type 3 Barricade Supports should be anchored to soil or pavement as described in the Compliant Work Zone Traffic Control Devices list (CWZTCD).*

LEGEND	
	Delineator
	Double delineator
	OM-2
	Sign
	Raised Pavement Marker (RPM)
	Traffic Flow

Texas Department of Transportation

Traffic Safety Division Standard

DELINEATOR & OBJECT MARKER PLACEMENT DETAILS

D & OM(4)-25

FILE: dom4-25.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS				
8-04 5-25	DIST	COUNTY		SHEET NO.
3-15				88
7-20				
20D				

STORM WATER POLLUTION PREVENTION PLAN

PROJECT NAME: *MATHIS ROAD RECONSTRUCTION*

LOCATION & LIMITS: *WALLER COUNTY, MATHIS ROAD FROM ROCHEN RD TO HARRIS COUNTY LINE*

See plan cover sheet for vicinity map.

PROJECT SCOPE:

Activity (check all that apply)	
Roadway Expansion	✓
Roadway New Construction	✓
Underground Storm Sewer	
Detention Pond	
Bridge Expansion	
Bridge New Construction	

TOTAL PROJECT AREA: *18.02* Acres *11214* Linear Feet

TOTAL AREA DISTURBED*: *18.02* Acres

(*Note: Include estimated need for project trailer and laydown yards.)

EXISTING CONDITIONS OF SOIL, VEGETATION, AND DRAINAGE:

PHASED CONSTRUCTION ACTIVITIES:

1. IMPLEMENT SEDIMENT CONTROLS PRIOR TO DISTURBING EXISTING VEGETATION.
2. CONSTRUCT ROADWAY IMPROVEMENTS, INCLUDING TEMPORARY PAVEMENT AS REQUIRED TO MANTAIN TRAFFIC.
3. INSTALL TRAFFIC CONTROL DEVICES AND PERMANENT SIGNING AS SHOWN IN THE PLANS.
4. FINAL SODDING AND FINAL PAVEMENT STRIPING.

DESCRIPTION OF DRAINAGE AREAS AND OUTFALLS:

DRAINAGE WITHIN THE MATHIS RD CORRIDOR IS CONVEYED BY ROADSIDE DITCHES AND CROSS CULVERTS, WITH RUNOFF GENERALLY FLOWING EAST TO WEST THROUGH THE CULVERTS.
ALL DRAINAGE ULTIMATELY OUTFALLS TO MOUND CREEK UPSTREAM OF THE EXISTING BRIDGE.

All outfall structures will be constructed in accordance to Harris County Specification 460 and any applicable specification referenced by it. Drainage pathways will shown on plan sheets stored with other attachments to this SWPPP.

Is Receiving Waters listed on the current TCEQ 303(d) list?
☐ No ☐ Yes, if yes list impairment _____.

RECEIVING WATERS/CONVEYANCE:

Include name(s) of MS4 Operator(s) as applicable.

DISCHARGES FROM THE PROJECT CORRIDOR ARE CONVEYED VIA ROADSIDE DITCHES AND CROSS-CULVERTS TO MOUND CREEK (HCFCD UNIT K 166-00-00). MOUND CREEK IS A TRIBUTARY WITHIN THE CYPRESS CREEK WATERSHED AND FLOWS TO CYPRESS CREEK (HCFCD UNIT K 100-00-00). CYPRESS CREEK CONVEYS FLOW DOWNSTREAM AND ULTIMATELY DISCHARGES TO GALVESTON BAY.

MAJOR SOIL DISTURBING ACTIVITIES:

ACTIVITY (CHECK ALL THAT APPLY)	
SPEC 100 – Preparing Right-of-Way	✓
SPEC 104/110/400 – Excavating	✓
SPEC 400 – Fill	✓
Leveling/Grading	✓

NOTES:

See Site Plan for detailed planning drawings.

SOIL STABILIZATION AND SEDIMENT CONTROL MEASURE:

MEASURES	TEMPORARY	PERMANENT
SPEC 162 – Sodding		
SPEC 164 – Seeding		✓
SPEC 164 – Erosion Control Mat/Mesh		✓
SPEC 164 – Hydro-mulch		✓
SPEC 591 – Watering for Dust Control		
SPEC 591 – Rock Filter Dam	✓	
SPEC 591 – Construction Exit	✓	
SPEC 591 – Inlet Protection Barrier, Stage I		
SPEC 591 – Inlet Protection Barrier, Stage II		
SPEC 591 – Sediment-Control Fence	✓	
SPEC 591 – Concrete Truck Washout Structures	✓	

NOTES:

If sediment escapes off site, these accumulations will be removed to minimize impact. Rock filter dams will be cleared before the reach 1/3 the height of the dam, other control measures will be cleared before their capacity has been reduced by 50%. As required in CGP TXR 150000, soil stabilization measures will be initiated in portions of the site where activities have ceased for a period exceeding 14 days. This stabilization will commence no later than the day following completion of work in these areas. If prompt repair or replacement is not feasible, the reason will be documented in the SWPPP. Records of dates for major grading activities, and initiation of stabilization measures will be maintained in the SWPPP. Daily work logs related to this section will be kept in CAPTRAC. The Harris County SWPPP detail sheet will be used when implementing BMP's and included with this document.

Current construction specification documents can be found at:
http://www.eng.hctx.net/Consultants/Standards-Specifications/Standard-Engineering-Design-Specifications

INSPECTION & MAINTENANCE:

Inspection and Maintenance will be performed according to SPEC 591. Inspections will be conducted at least every 7 calendar days. Inspection forms will be filed with SWPPP supporting documents. If repair or replacement of stabilization or erosion control features is necessary, it must be completed at the earliest date possible. Amendments will be tracked on the SWPPP Amendment Log. Daily work logs related to this section will be kept in current construction management system.

POTENTIAL POLLUTION SOURCES:

Concrete	✓	Cleaning Solvents	✓
Fertilizer	✓	Curing Compounds	✓
Pesticides	✓	Hydraulic Fluid	✓
Asphalt	✓	Motor Oil	✓
Paint	✓		
Gasoline	✓		
Diesel Fuel	✓		
Sanitary Toilets	✓		

POLLUTION PREVENTION BMPS

Whenever possible all materials will be stored in their original containers in secure areas where spillage is protected from runoff. Stockpiles and work areas will be constructed in such a way to minimize the amount of sediment that enters receiving waters and wetlands. Spill prevention and control measures are included on attached site maps. Records of spills will be maintained with SWPPP supporting documents. Additional required BMPs can be found in SPEC 591. Temporary materials and structures will be removed from waterways as soon as feasible once they are no longer required.

WASTE MATERIAL:

All solid waste materials will be collected and stored in secure metal dumpsters, then transported to appropriate disposal facilities. Collection will be completed often enough to ensure that no waste materials will be lost due to overfilling of collection containers. Liquid wastes will be stored in sealed containers in designated areas and disposed of according to all applicable regulations. All wasted containers should meet all state and local requirements.

RESPONSIBLE PARTY/CONTRACTOR

Name	
Title	
Company	
Signature	

SW3P-WF 10/10/23

DATE: 5/29/2026 10:49:12 AM
FILE: \\hrgreen.com\hrg\Data\2024\24041881\DesignData\4 - Design\Supporting Documents\Standards - Plan Set - DGN Files\SW3P-WF 23.10.10.dgn

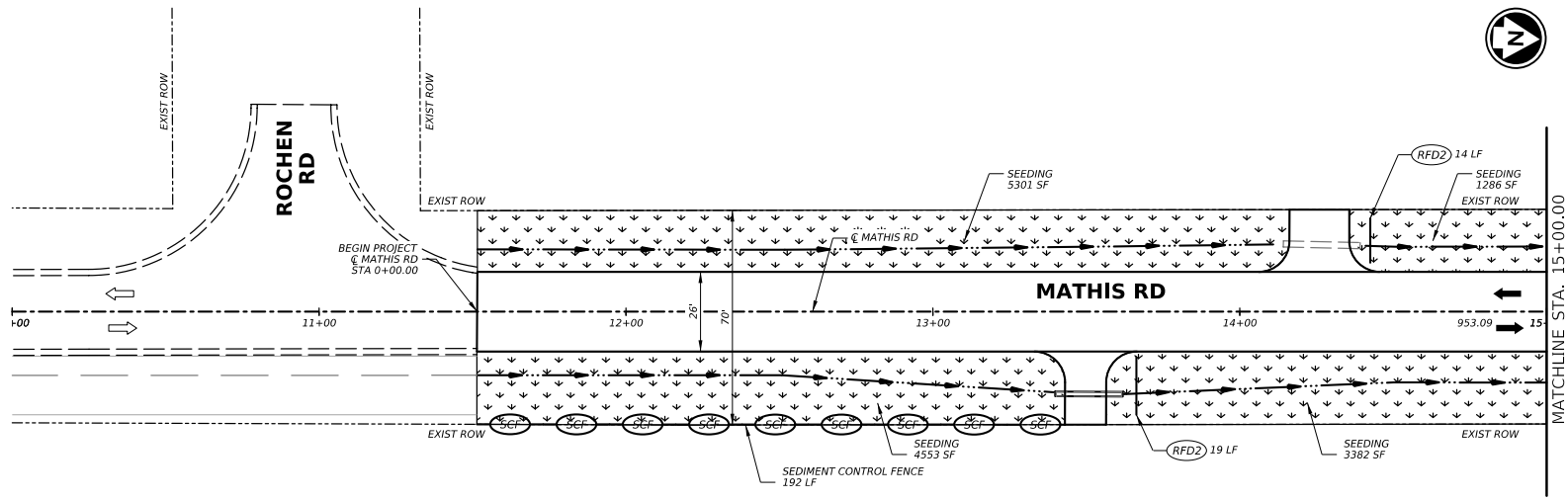
REV. NO.	DATE	DESCRIPTION	BY

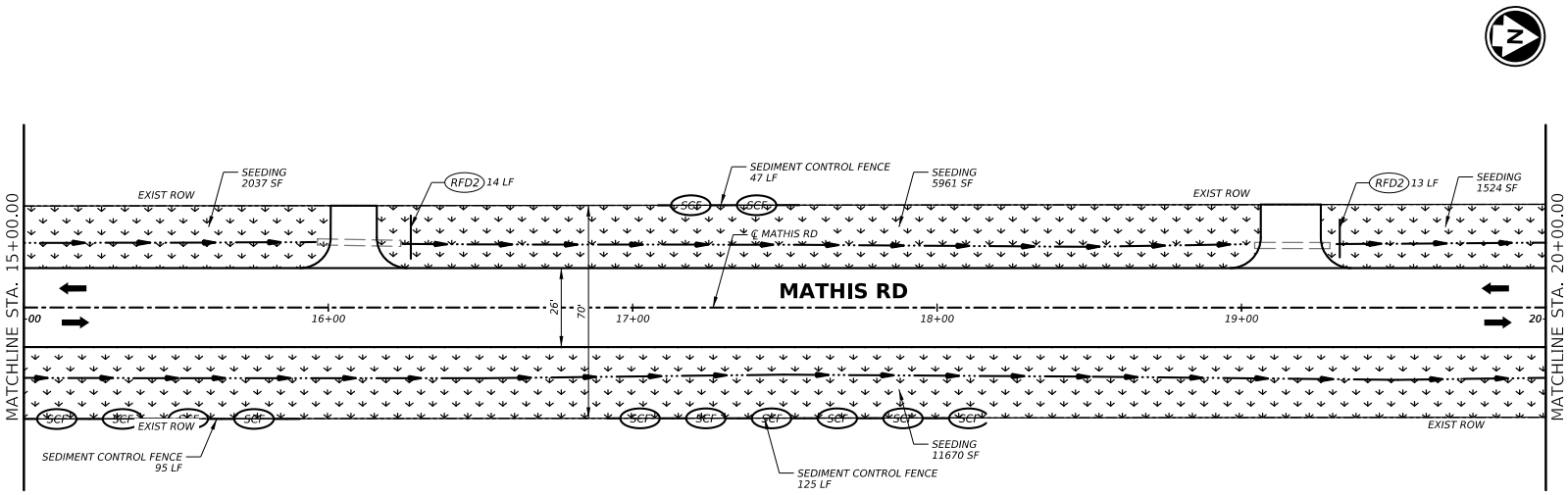
WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

STORM WATER POLLUTION PREVENTION PLAN WORK FORM

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW: JDZ	DIST	COUNTY		SHEET NO.
CK DW: DR		WALLER COUNTY		89





LEGEND

- RFD2 — ROCK FILTER DAM
- SCF — SEDIMENT CONTROL FENCE
- PROP SEEDING
- PROP DIRECTION OF TRAVEL
- EXIST TRAFFIC FLOW

NOTES:

1. THE STABILIZED CONSTRUCTION EXITS (SC-1) SHALL BE 50 FEET IN LENGTH WITH A MINIMUM 20 FOOT WIDTH.
2. PROTECT EXISTING INLETS ON ADJACENT STREETS WITH GRAVEL BAGS (GB) ON EITHER SIDE OF INLET IN THE GUTTER OR WITH INLET PROTECTION BARRIERS (IPB) AROUND INLETS IN ROADSIDE DITCHES. GRAVEL BAGS AND INLET PROTECTION BARRIERS SHALL REMAIN UNTIL CONSTRUCTION IS COMPLETED.
3. CONTRACTOR SHALL MAINTAIN DAILY, ALL SANDBAGS (SB) AND INLET PROTECTION BARRIERS (IPB), (IPB) SHALL REMAIN IN PLACE UNTIL VEGETATION IS WELL ESTABLISHED, PER SPECIFICATION.
4. OTHER EROSION AND SEDIMENTATION CONTROLS INCLUDE:
   A) STABILIZED MAIN CONSTRUCTION ACCESS AT ALL ENTRANCES TO THE PROJECT.
   B) DAILY STREET SWEEPING.
   C) INSPECTION AND MAINTENANCE PER APPROVED EROSION AND SEDIMENTATION CONTROL PLAN.
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   D. CHECKLIST TO BE ALL SWPPP SHEETS.

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 20 40
0 2 4
SCALE IN FEET

SHEET 1 OF 12

REV. NO.	DATE	DESCRIPTION	BY

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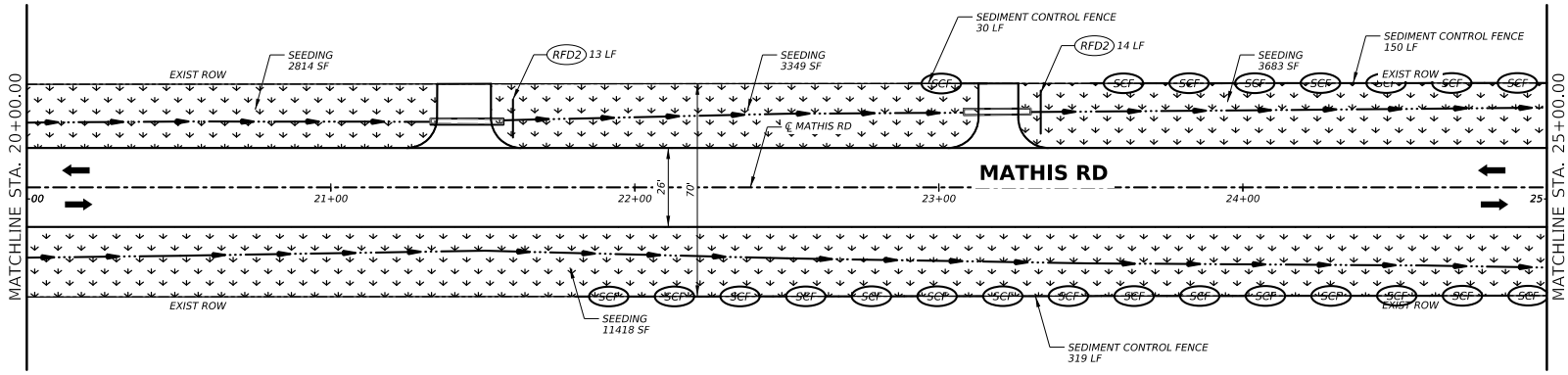
WALLER COUNTY
ENGINEERING DEPARTMENT

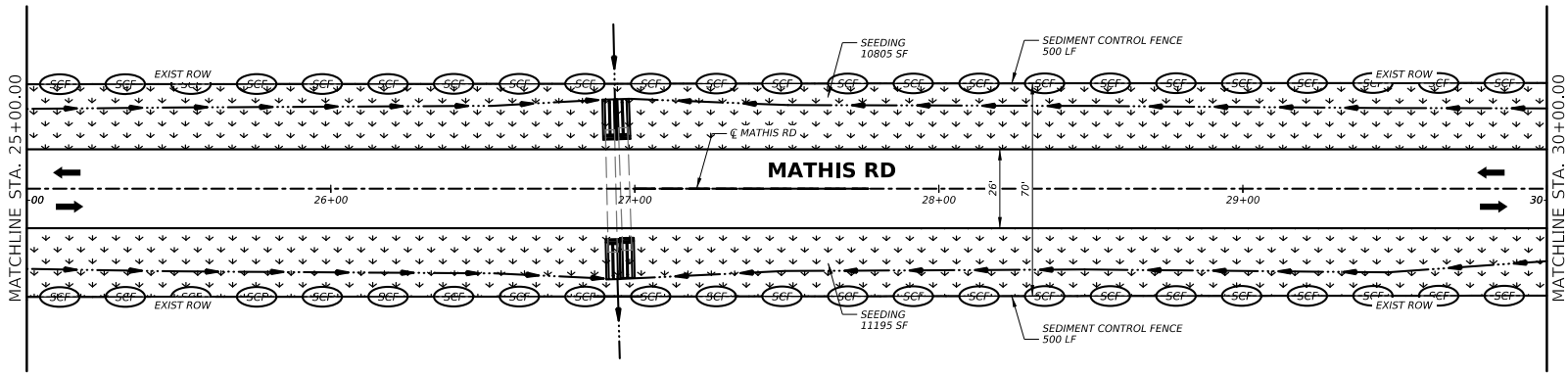
THE STATE OF TEXAS WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD
SW3P LAYOUT
BEGIN PROJECT TO STA 20+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		90





LEGEND

- RFD2 — ROCK FILTER DAM
- SCF — SEDIMENT CONTROL FENCE
- PROP SEEDING
- PROP DIRECTION OF TRAVEL
- EXIST TRAFFIC FLOW

NOTES:

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STATE OF TEXAS
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120041
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5/29/2026

0 20 40
0 2 4
SCALE IN FEET

SHEET 2 OF 12

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WALLER COUNTY ENGINEERING DEPARTMENT

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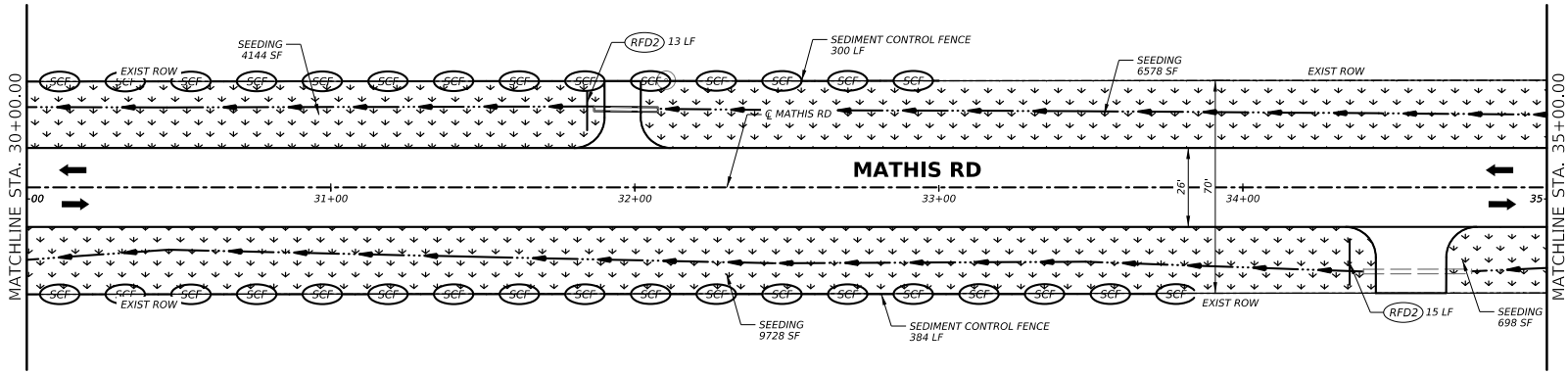
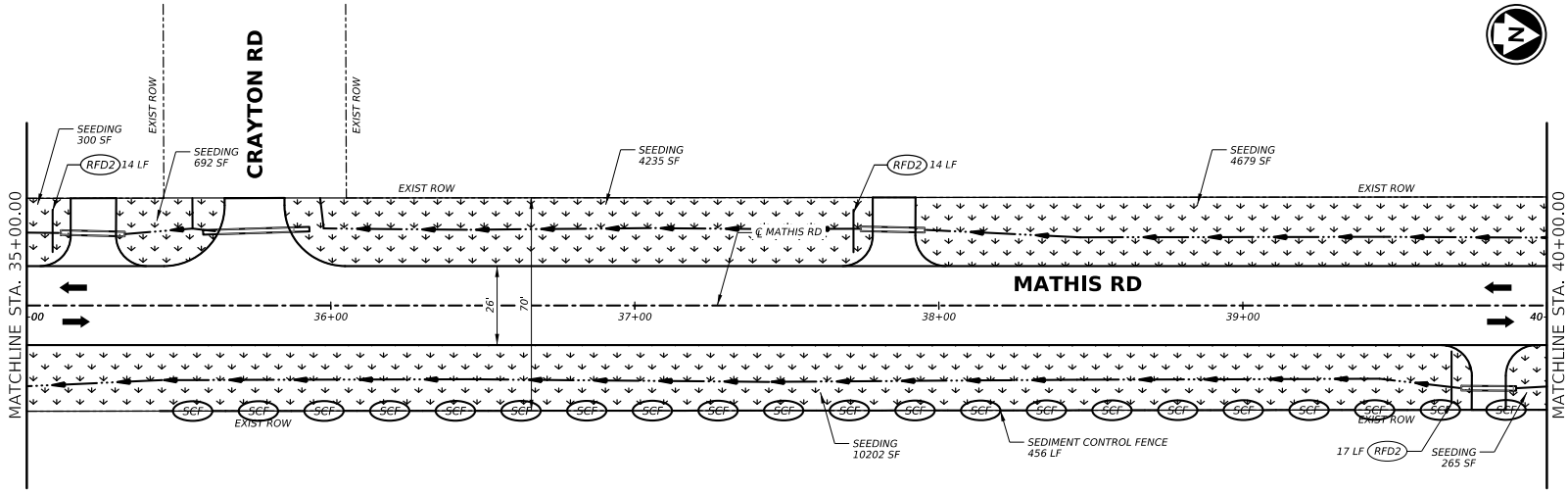
MATHIS ROAD
SW3P LAYOUT
STA 20+00 TO STA 30+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		91





LEGEND

- RFD2 — ROCK FILTER DAM
- SCF — SEDIMENT CONTROL FENCE
- PROP SEEDING
- PROP DIRECTION OF TRAVEL
- EXIST TRAFFIC FLOW

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STATE OF TEXAS — ANDREW CRUMP — 120041 — LICENSED PROFESSIONAL ENGINEER — 5/29/2026

SCALE IN FEET: 0 20 40 / 0 2 4

SHEET 3 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY
ENGINEERING DEPARTMENT

THE STATE OF TEXAS — WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
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Firm No. F-11278

MATHIS ROAD
SW3P LAYOUT
STA 30+00 TO STA 40+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		92

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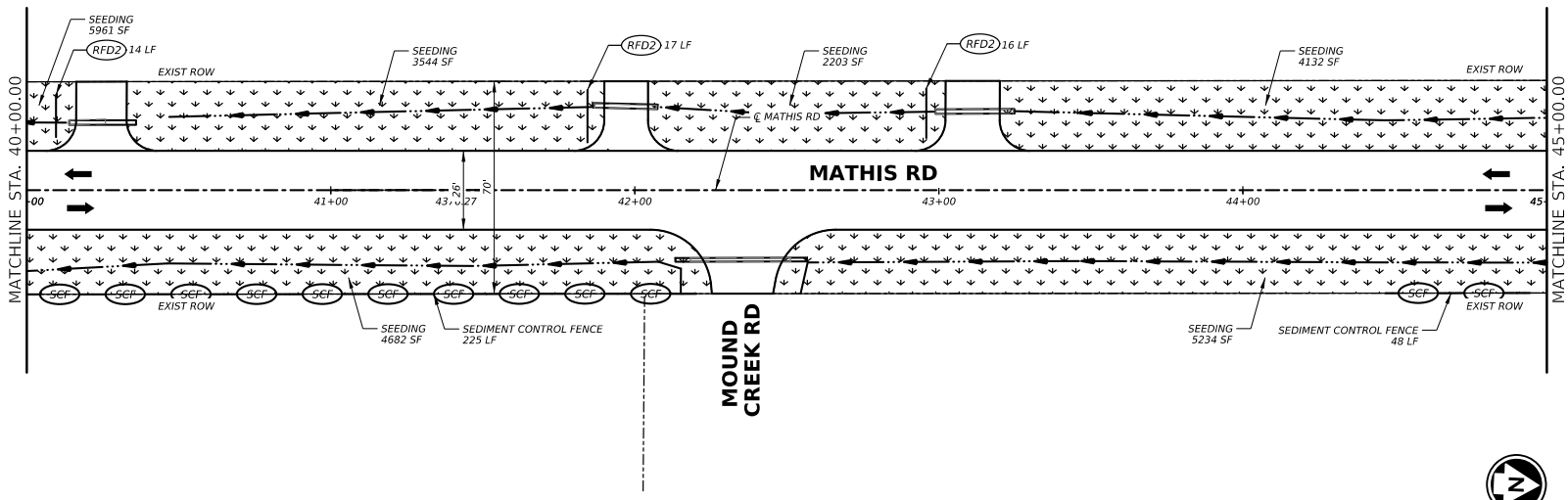

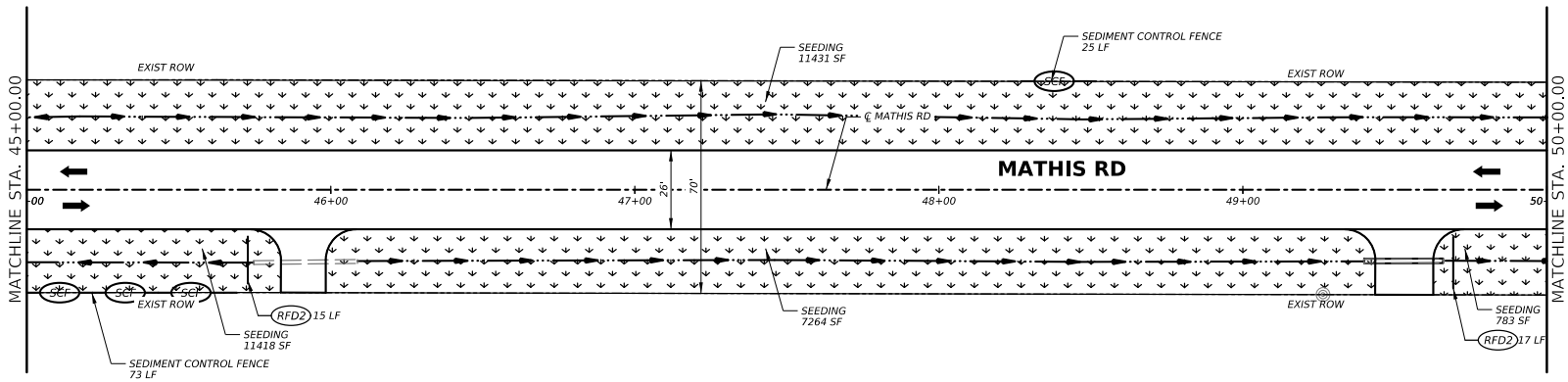

LEGEND

- RFD2 — ROCK FILTER DAM
- SCF — SEDIMENT CONTROL FENCE
- PROP SEEDING
- PROP DIRECTION OF TRAVEL
- EXIST TRAFFIC FLOW

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STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 20 40
0 2 4
SCALE IN FEET

SHEET 4 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS WALLER COUNTY

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MATHIS ROAD
SW3P LAYOUT
STA 40+00 TO STA 50+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		93

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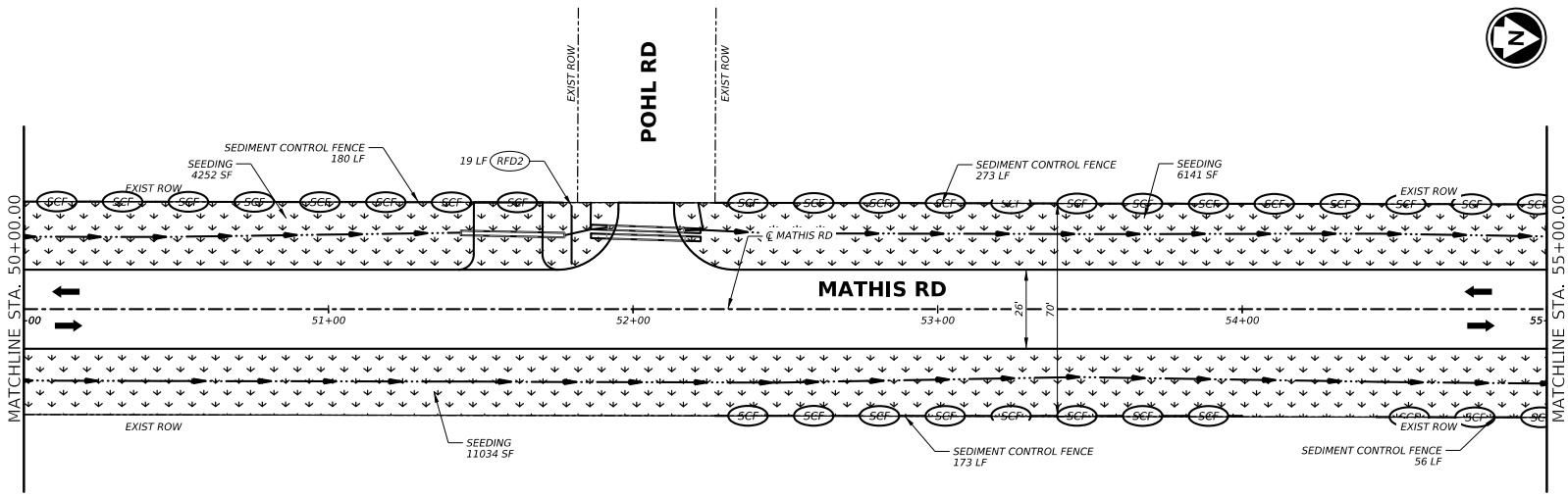

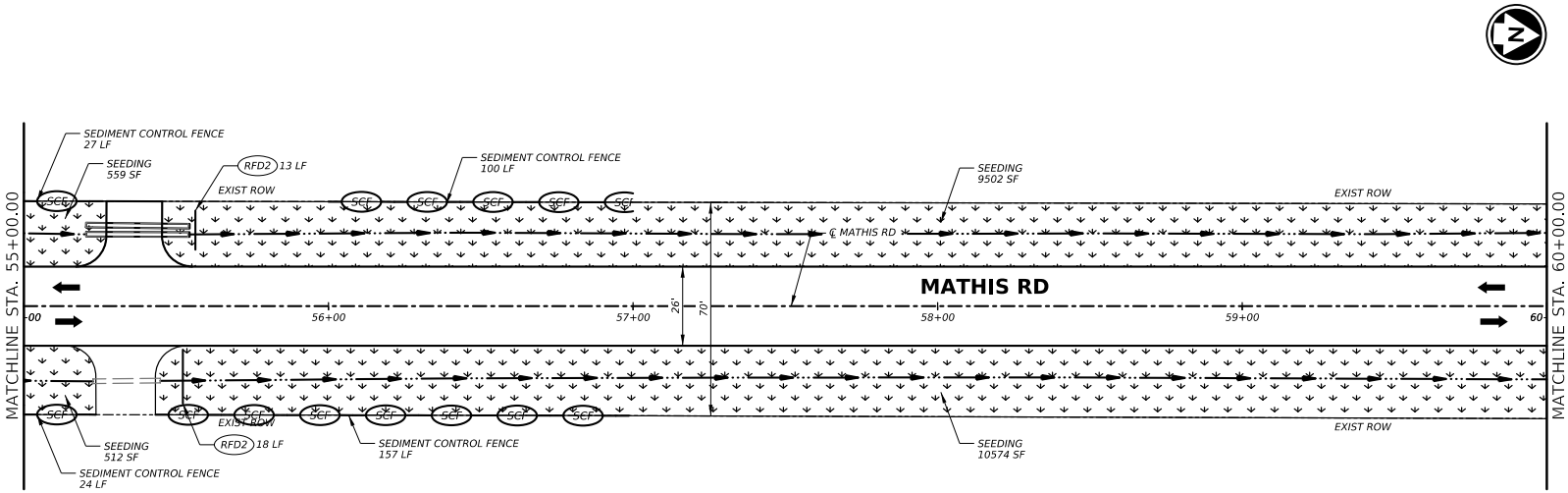

LEGEND

- RFD2 — ROCK FILTER DAM
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- PROP SEEDING
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0 20 40
0 2 4
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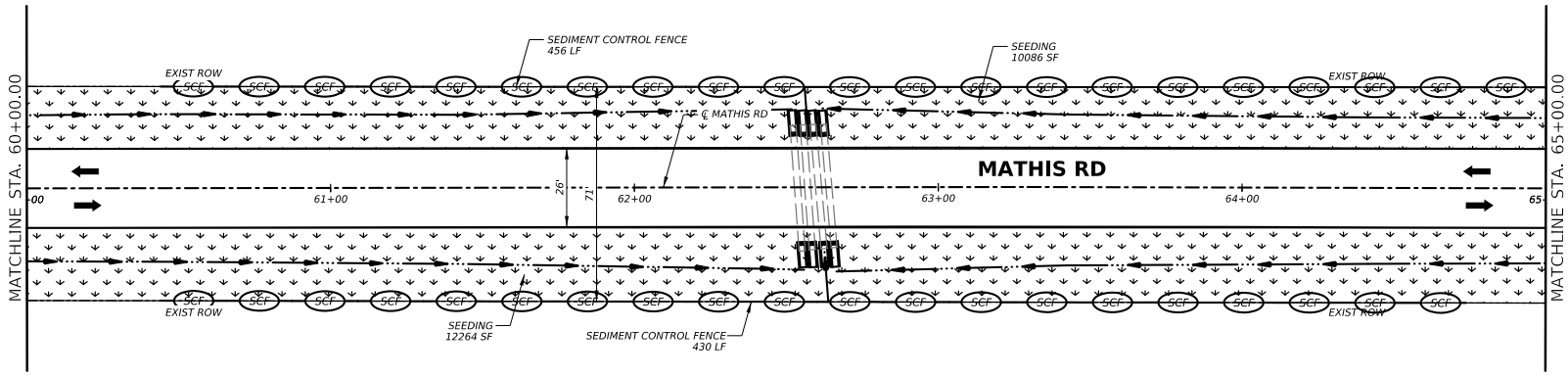

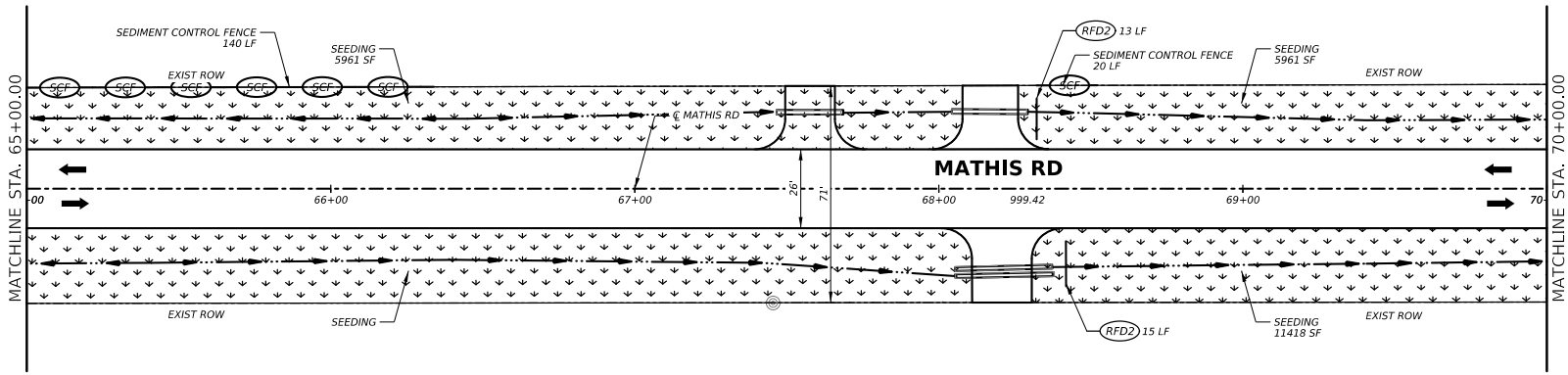

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   C. THE DATES WHEN STABILIZATION (BOTH TEMPORARY AND/OR PERMANENT) MEASURES ARE INITIATED.
   D. CHECKLIST TO BE ALL SWPPP SHEETS.

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

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SCALE IN FEET

SHEET 6 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY
ENGINEERING DEPARTMENT

THE STATE OF TEXAS
WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD
SW3P LAYOUT
STA 60+00 TO STA 70+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		95

DATE: 5/29/2026 10:49:19 AM
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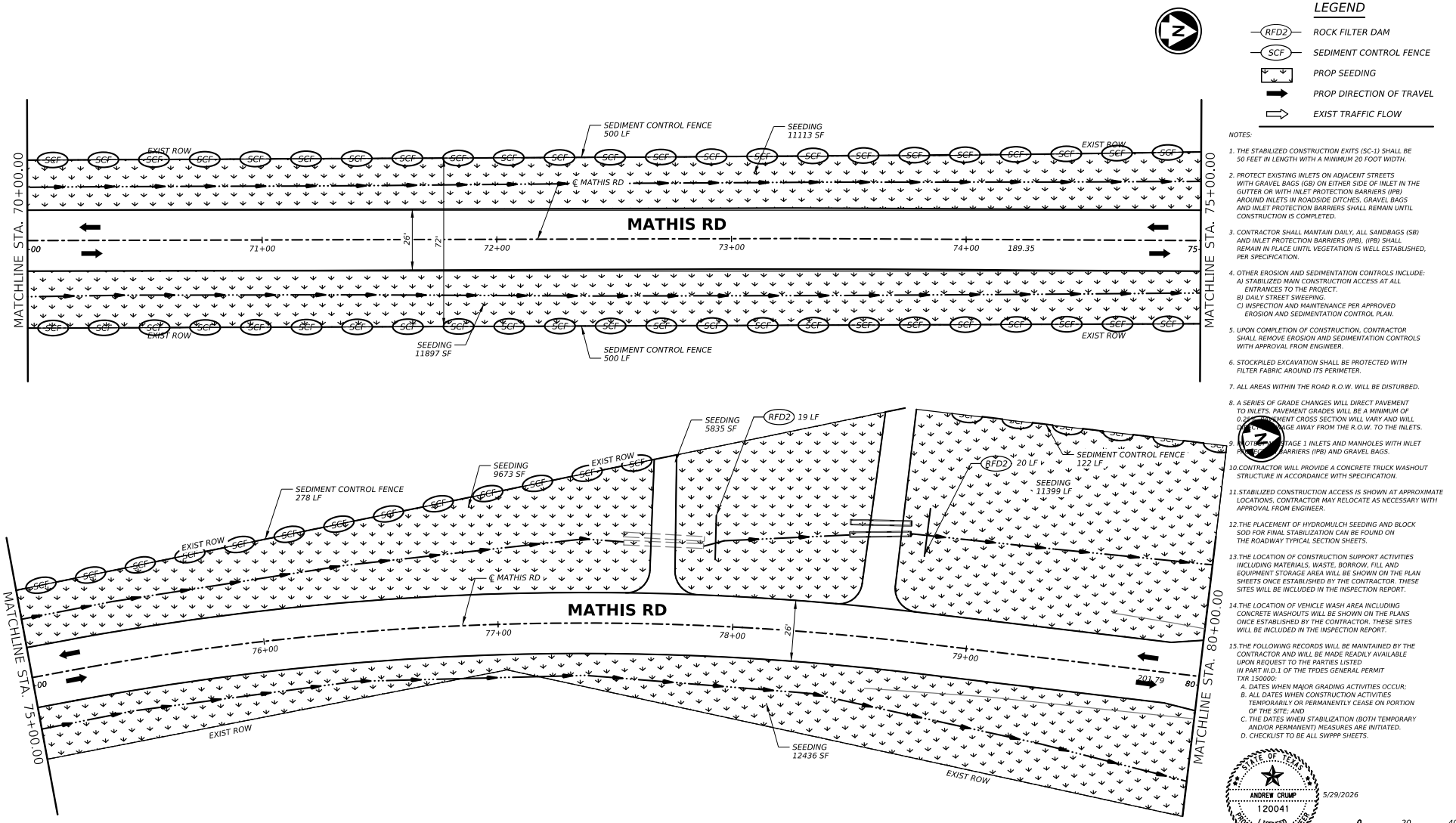

LEGEND

- RFD2 — ROCK FILTER DAM
- SCF — SEDIMENT CONTROL FENCE
- PROP SEEDING
- PROP DIRECTION OF TRAVEL
- EXIST TRAFFIC FLOW

NOTES:

1. THE STABILIZED CONSTRUCTION EXITS (SC-1) SHALL BE 50 FEET IN LENGTH WITH A MINIMUM 20 FOOT WIDTH.
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STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

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SCALE IN FEET

SHEET 7 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD SW3P LAYOUT STA 70+00 TO STA 80+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		96

DATE: 5/29/2026 10:49:19 AM
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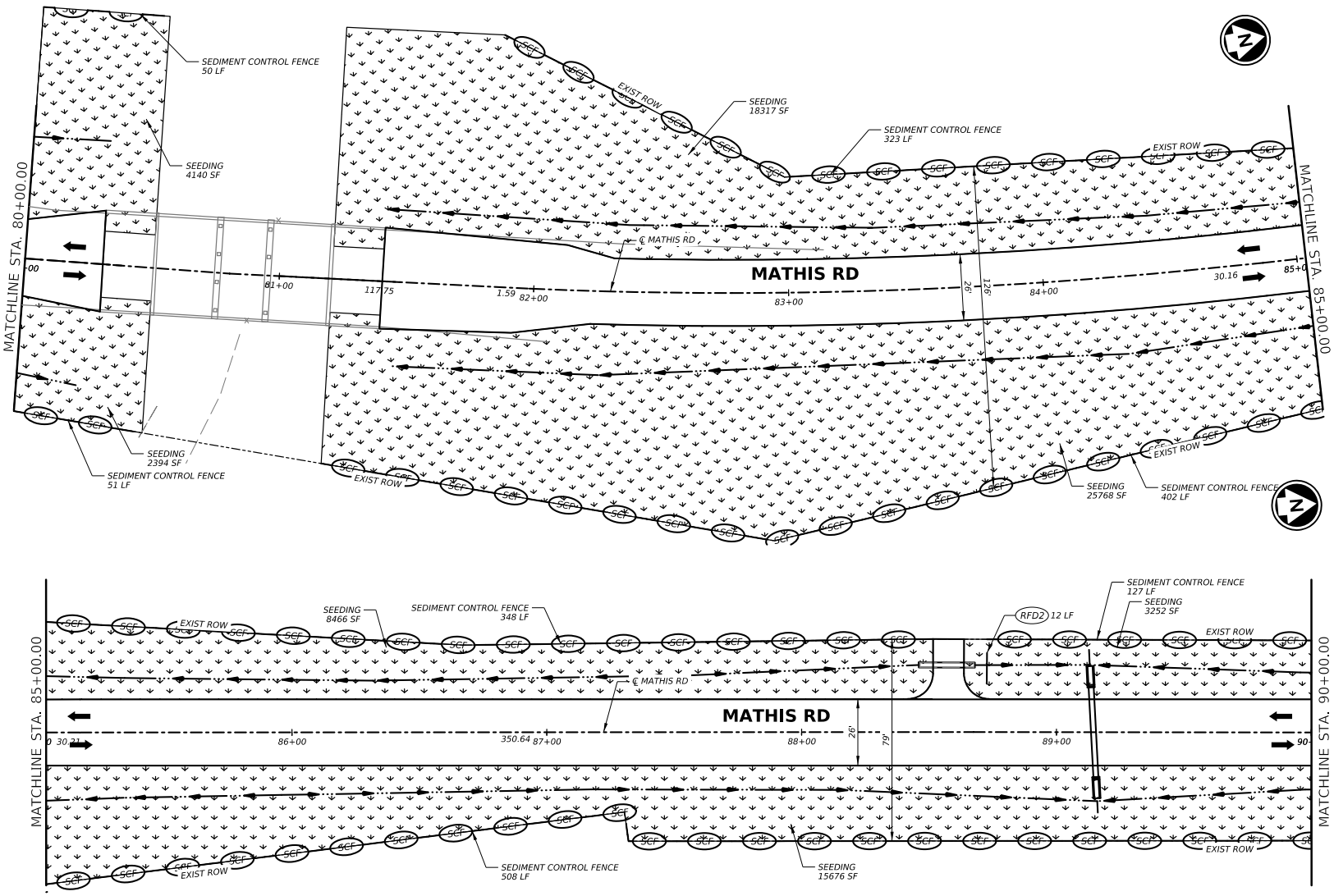

LEGEND

- RFD2 — ROCK FILTER DAM
- SCF — SEDIMENT CONTROL FENCE
- PROP SEEDING
- PROP DIRECTION OF TRAVEL
- EXIST TRAFFIC FLOW

NOTES:

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STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

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SCALE IN FEET

SHEET 8 OF 12

REV. NO.	DATE	DESCRIPTION	BY

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WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
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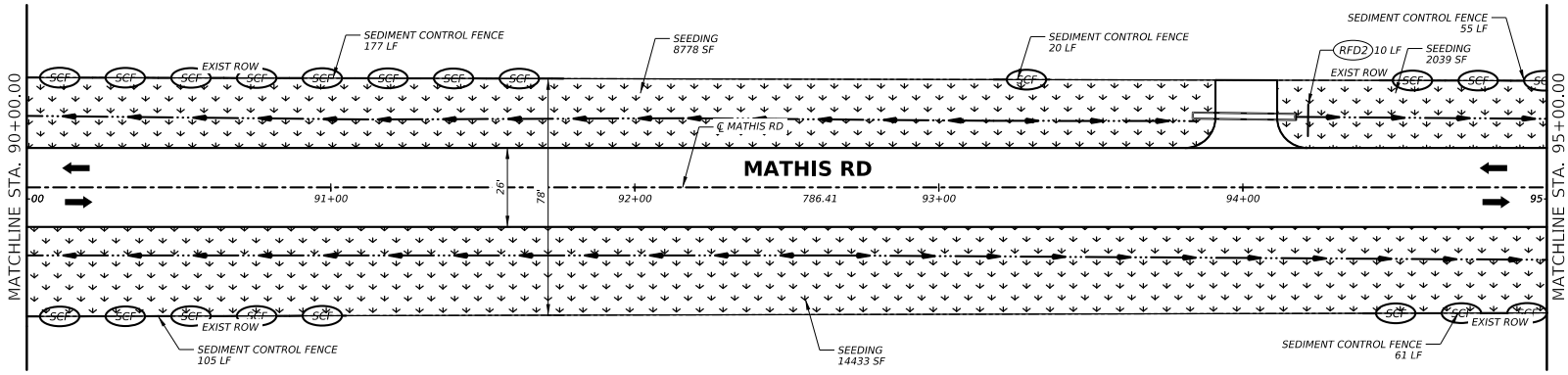
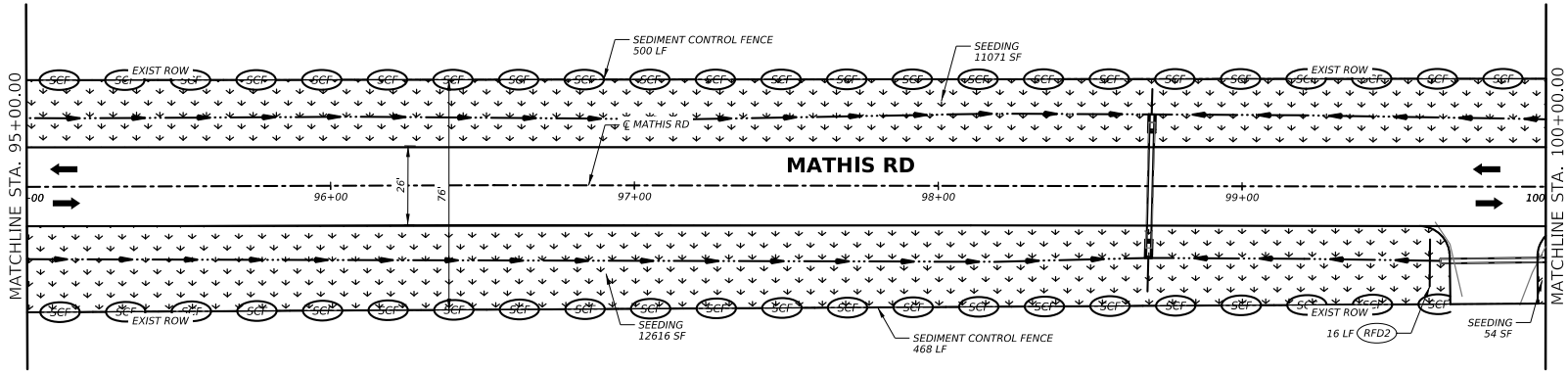
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD
SW3P LAYOUT
STA 80+00 TO STA 90+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		97





LEGEND

- RFD2 — ROCK FILTER DAM
- SCF — SEDIMENT CONTROL FENCE
- PROP SEEDING
- PROP DIRECTION OF TRAVEL
- EXIST TRAFFIC FLOW

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STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

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SCALE IN FEET

SHEET 9 OF 12

DATE: 5/29/2026 10:49:21 AM
FILE: \\hrgreen.com\hrg\Data\2024\2404188\DesignData\4 - Design\Plan Set\9. Environmental\4188 PR SW3P.dgn

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY
ENGINEERING DEPARTMENT

THE STATE OF TEXAS
WALLER COUNTY

PREPARED BY:
HRGreen
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HOUSTON, TX 77042
(713) 965-9996
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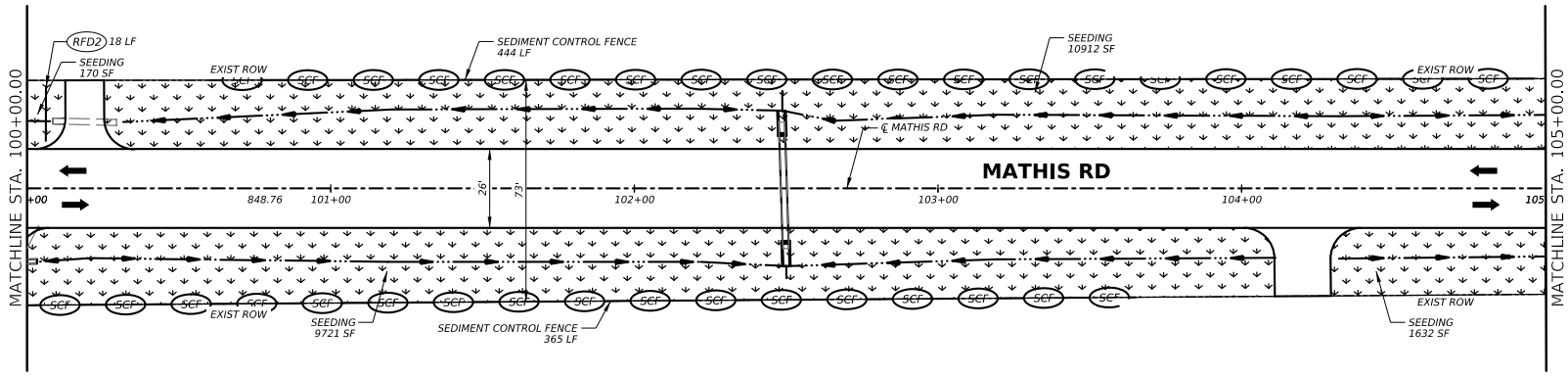
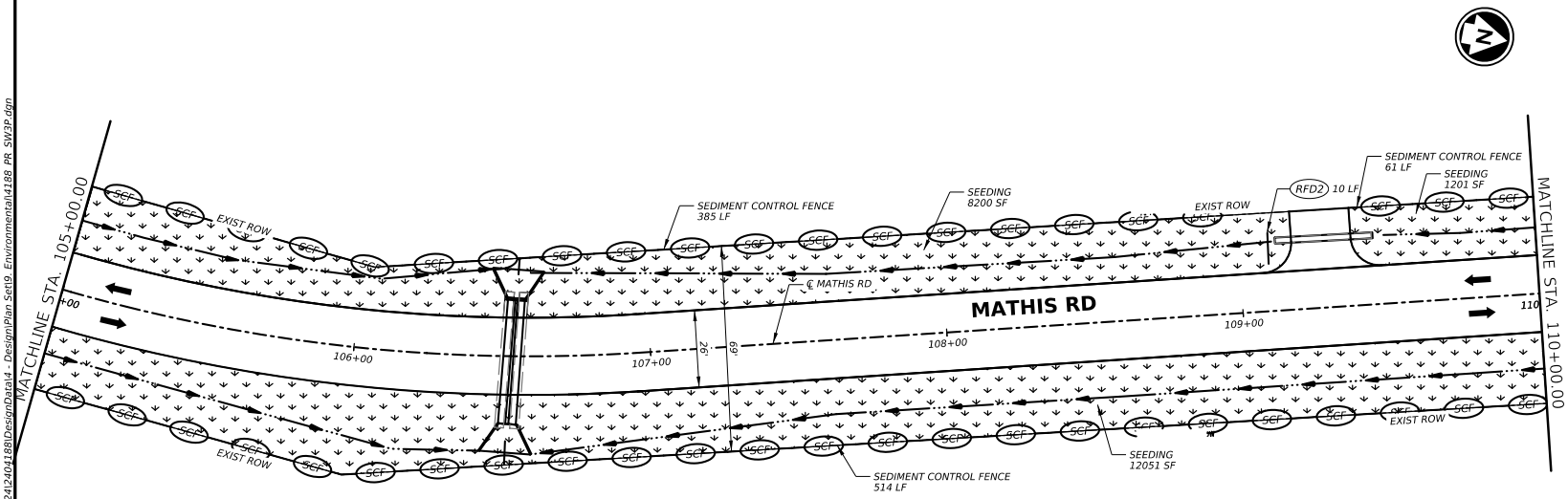
HRGreen.com
Firm No. F-11278

MATHIS ROAD
SW3P LAYOUT
STA 90+00 TO STA 100+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		98





LEGEND

- RFD2 — ROCK FILTER DAM
- SCF — SEDIMENT CONTROL FENCE
- PROP SEEDING
- PROP DIRECTION OF TRAVEL
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STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

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SCALE IN FEET

SHEET 10 OF 12

DATE: 5/29/2026 10:49:22 AM
FILE: \\hrgreen.com\hrg\Data\2024\240418\Design\Data\4 - Design\Plan Set\9. Environmental\418B PR SW3P.dgn

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY
ENGINEERING DEPARTMENT

THE STATE OF TEXAS
WALLER COUNTY

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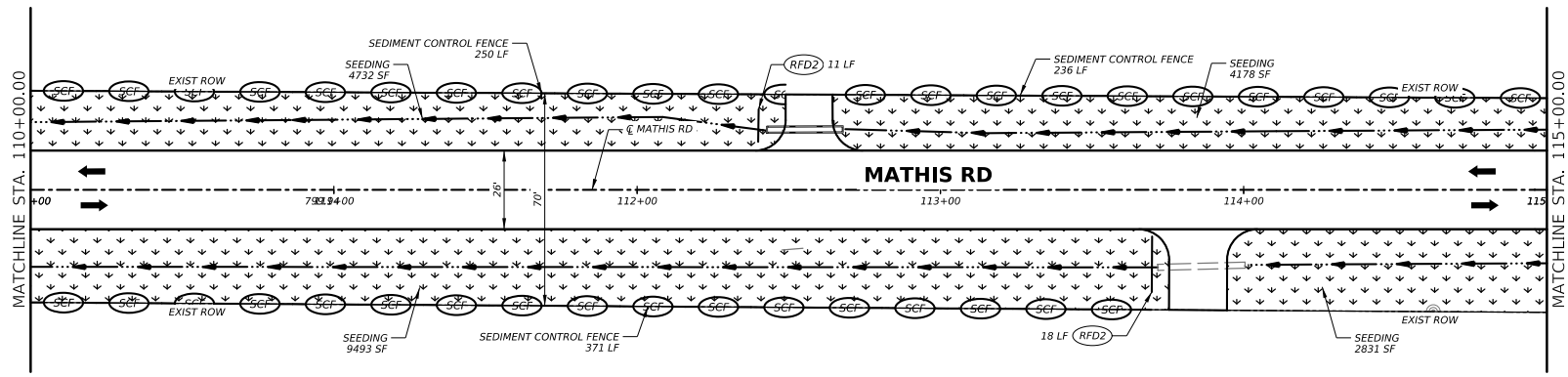
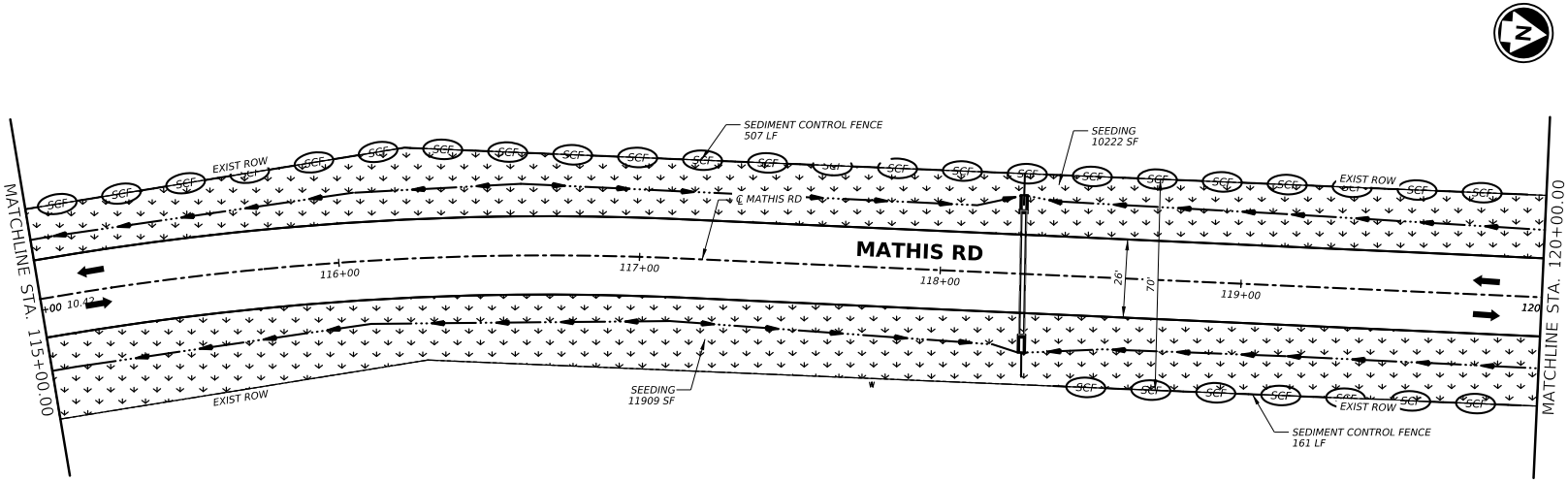
MATHIS ROAD
SW3P LAYOUT
STA 100+00 TO 110+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		99





LEGEND

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15. THE FOLLOWING RECORDS WILL BE MAINTAINED BY THE CONTRACTOR AND WILL BE MADE READILY AVAILABLE UPON REQUEST TO THE PARTIES LISTED IN PART III.D.1 OF THE TPDES GENERAL PERMIT TXR 150000:
   A. DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
   B. ALL DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON PORTION OF THE SITE; AND
   C. THE DATES WHEN STABILIZATION (BOTH TEMPORARY AND/OR PERMANENT) MEASURES ARE INITIATED.
   D. CHECKLIST TO BE ALL SWPPP SHEETS.

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 20 40
0 2 4
SCALE IN FEET

SHEET 11 OF 12

REV. NO.	DATE	DESCRIPTION	BY

DATE: 5/29/2026 10:49:23 AM
FILE: \\hrgreen.com\hrg\Data\2024\2404188\DesignData\4 - Design\Plan Set\9. Environmental\4188 PR SW3P.dgn

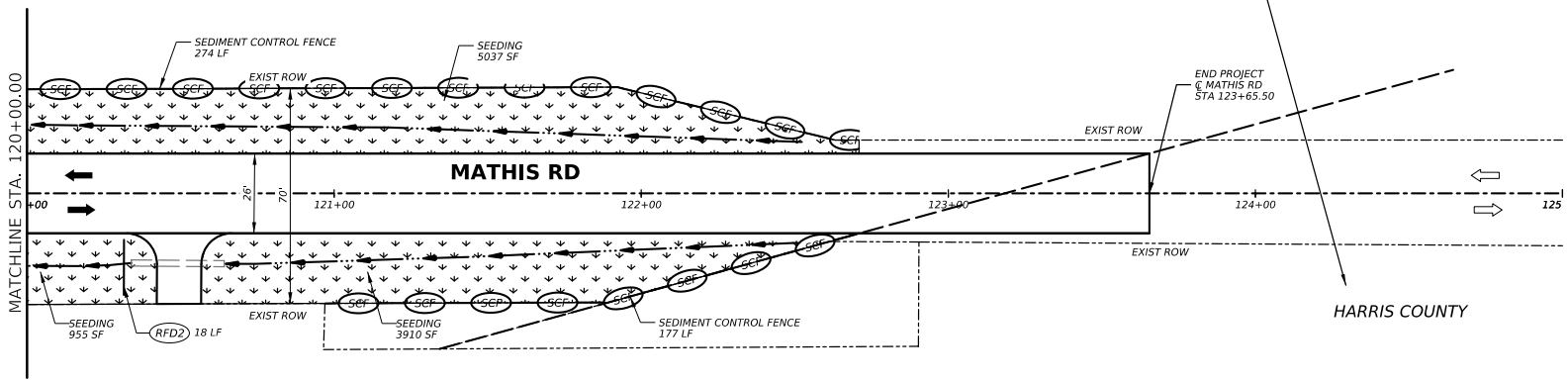
WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS WALLER COUNTY

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS ROAD
SW3P LAYOUT
STA 110+00 TO STA 120+00

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		100



LEGEND

- RFD2 — ROCK FILTER DAM
- SCF — SEDIMENT CONTROL FENCE
- PROP SEEDING
- PROP DIRECTION OF TRAVEL
- EXIST TRAFFIC FLOW

NOTES:

1. THE STABILIZED CONSTRUCTION EXITS (SC-1) SHALL BE 50 FEET IN LENGTH WITH A MINIMUM 20 FOOT WIDTH.
2. PROTECT EXISTING INLETS ON ADJACENT STREETS WITH GRAVEL BAGS (GB) ON EITHER SIDE OF INLET IN THE GUTTER OR WITH INLET PROTECTION BARRIERS (IPB) AROUND INLETS IN ROADSIDE DITCHES. GRAVEL BAGS AND INLET PROTECTION BARRIERS SHALL REMAIN UNTIL CONSTRUCTION IS COMPLETED.
3. CONTRACTOR SHALL MAINTAIN DAILY, ALL SANDBAGS (SB) AND INLET PROTECTION BARRIERS (IPB), (IPB) SHALL REMAIN IN PLACE UNTIL VEGETATION IS WELL ESTABLISHED, PER SPECIFICATION.
4. OTHER EROSION AND SEDIMENTATION CONTROLS INCLUDE:
   A) STABILIZED MAIN CONSTRUCTION ACCESS AT ALL ENTRANCES TO THE PROJECT.
   B) DAILY STREET SWEEPING.
   C) INSPECTION AND MAINTENANCE PER APPROVED EROSION AND SEDIMENTATION CONTROL PLAN.
5. UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL REMOVE EROSION AND SEDIMENTATION CONTROLS WITH APPROVAL FROM ENGINEER.
6. STOCKPILED EXCAVATION SHALL BE PROTECTED WITH FILTER FABRIC AROUND ITS PERIMETER.
7. ALL AREAS WITHIN THE ROAD R.O.W. WILL BE DISTURBED.
8. A SERIES OF GRADE CHANGES WILL DIRECT PAVEMENT TO INLETS. PAVEMENT GRADES WILL BE A MINIMUM OF 0.25%. PAVEMENT CROSS SECTION WILL VARY AND WILL DIRECT DRAINAGE AWAY FROM THE R.O.W. TO THE INLETS.
9. PROTECT ALL STAGE 1 INLETS AND MANHOLES WITH INLET PROTECTION BARRIERS (IPB) AND GRAVEL BAGS.
10. CONTRACTOR WILL PROVIDE A CONCRETE TRUCK WASHOUT STRUCTURE IN ACCORDANCE WITH SPECIFICATION.
11. STABILIZED CONSTRUCTION ACCESS IS SHOWN AT APPROXIMATE LOCATIONS, CONTRACTOR MAY RELOCATE AS NECESSARY WITH APPROVAL FROM ENGINEER.
12. THE PLACEMENT OF HYDROMULCH SEEDING AND BLOCK SOD FOR FINAL STABILIZATION CAN BE FOUND ON THE ROADWAY TYPICAL SECTION SHEETS.
13. THE LOCATION OF CONSTRUCTION SUPPORT ACTIVITIES INCLUDING MATERIALS, WASTE, BORROW, FILL AND EQUIPMENT STORAGE AREA WILL BE SHOWN ON THE PLAN SHEETS ONCE ESTABLISHED BY THE CONTRACTOR. THESE SITES WILL BE INCLUDED IN THE INSPECTION REPORT.
14. THE LOCATION OF VEHICLE WASH AREA INCLUDING CONCRETE WASHOUTS WILL BE SHOWN ON THE PLANS ONCE ESTABLISHED BY THE CONTRACTOR. THESE SITES WILL BE INCLUDED IN THE INSPECTION REPORT.
15. THE FOLLOWING RECORDS WILL BE MAINTAINED BY THE CONTRACTOR AND WILL BE MADE READILY AVAILABLE UPON REQUEST TO THE PARTIES LISTED IN PART III.D.1 OF THE TPDES GENERAL PERMIT TXR 150000:
   A. DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
   B. ALL DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON PORTION OF THE SITE; AND
   C. THE DATES WHEN STABILIZATION (BOTH TEMPORARY AND/OR PERMANENT) MEASURES ARE INITIATED.
   D. CHECKLIST TO BE ALL SWPPP SHEETS.

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
5/29/2026

0 20 40
0 2 4
SCALE IN FEET

SHEET 12 OF 12

REV. NO.	DATE	DESCRIPTION	BY

DATE: 5/29/2026 10:49:24 AM
FILE: \\hrgreen.com\hrg\Data\2024\24041881DesignData\4 - DesignPlan Set\9. Environmental\4188 PR SW3P.dgn

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
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(713) 965-9996
(713) 965-0044 FAX
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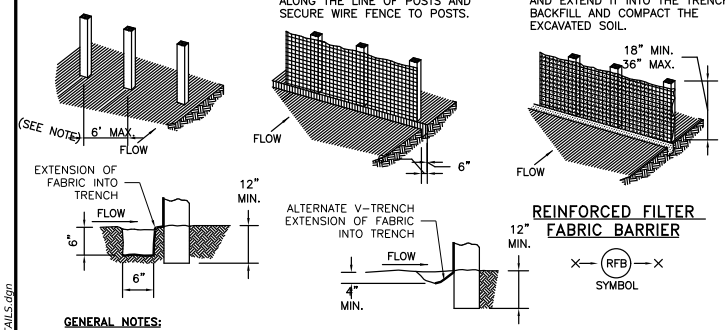
Firm No. F-11278

MATHIS ROAD
SW3P LAYOUT
STA 120+00 TO END PROJECT

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		101

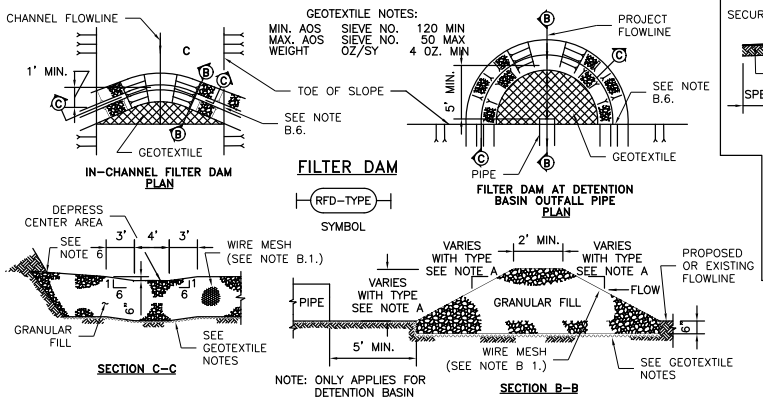
1. SET POSTS AT REQUIRED SPACING
2. EXCAVATE A 6"x6" TRENCH UPSLOPE ALONG THE LINE OF POSTS AND SECURE WIRE FENCE TO POSTS.
3. ATTACH FILTER FABRIC TO POSTS AND EXTEND IT INTO THE TRENCH. BACKFILL AND COMPACT THE EXCAVATED SOIL.



REINFORCED FILTER FABRIC BARRIER

RFB
SYMBOL

GENERAL NOTES:
1. SECURELY FASTEN MESH FENCING TO POSTS WITH STAPLES OR TIE WIRES.
2. SECURELY FASTEN FILTER FABRIC TO MESH FENCING.
3. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, OVERLAP 6 INCHES AT A POST, FOLD TOGETHER, AND ATTACH TO A POST.
4. REMOVE SEDIMENT DEPOSITS WHEN SILT REACHES ONE-THIRD OF THE HEIGHT OF THE FENCE IN DEPTH.
5. SILT FENCE MINIMUM 2' BEHIND CURB.



IN-CHANNEL FILTER DAM PLAN

FILTER DAM AT DETENTION BASIN OUTFALL PIPE PLAN

FILTER DAM

RFD-TYPE
SYMBOL

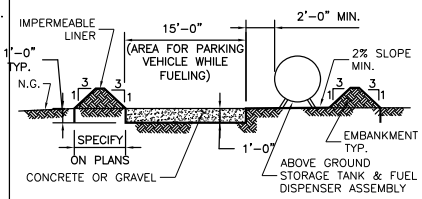
SECTION C-C

SECTION B-B

NOTE: ONLY APPLIES FOR DETENTION BASIN OUTFALL PIPE PROTECTION.

A. TYPES OF FILTER DAMS
1. TYPE 1 (NON-REINFORCED)
   a. HEIGHT – 18-24 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
   b. TOP WIDTH – 2 FEET (MINIMUM)
   c. SLOPES – 2:1 (MAXIMUM).
2. TYPE 2 (REINFORCED).
   a. HEIGHT – 18-36 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
   b. TOP WIDTH – 2 FEET (MINIMUM).
   c. SLOPES – 2:1 (MAXIMUM).
3. TYPE 3 (REINFORCED)
   a. HEIGHT – 36-48 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
   b. TOP WIDTH – 2 FEET (MINIMUM).
   c. SLOPES – 3:1 (MAXIMUM).
4. TYPE 4 (GABION)
   a. HEIGHT – 30 INCHES (MINIMUM). MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
   b. TOP WIDTH – 2 FEET (MINIMUM).
5. TYPE 5. AS SHOWN ON THE PLANS.

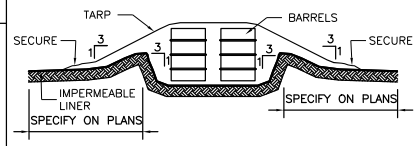
B. CONSTRUCT FILTER DAMS ACCORDING TO THE FOLLOWING CRITERIA UNLESS SHOWN OTHERWISE ON THE PLANS.
1. TYPE 2 AND 3 FILTER DAMS: SECURE WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1 INCH DIAMETER HEXAGONAL OPENINGS.
2. PLACE GRANULAR FILL ON THE WIRE MESH TO HEIGHT AND SLOPES SHOWN ON PLANS OR AS SPECIFIED BY THE ENGINEER.
   a. 3-5 INCHES FOR ROCK FILTER DAM TYPES 1, 2 AND 4.
   b. 4-8 INCHES FOR ROCK FILTER DAM TYPE REFER TO GRANULAR FILL IN SPECIFICATION SECTION No. 02378 RIPRAP AND GRANULAR FILL.
3. FOLD WIRE MESH AT UPSTREAM SIDE OVER GRANULAR FILL AND TIGHTLY SECURED TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS.
4. IN STREAMS: SECURE OR STAKE MESH TO STREAM BED PRIOR TO AGGREGATE PLACEMENT.
5. SEE HCFCD SPECIFICATION SECTION NO. 02364-FILTER DAMS.
6. EMBED ONE FOOT MINIMUM INTO SLOPE AND RAISE ONE FOOT HIGHER THAN CENTER OF DEPRESSED AREA AT SLOPE.



ABOVE GROUND TEMP. VEHICLE & EQUIPMENT FUELING AREA WITH TANK

TFA
SYMBOL

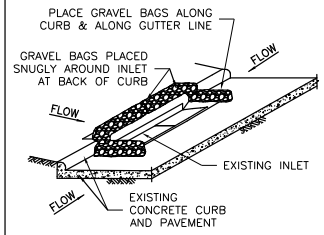
GENERAL NOTES:
1. THE SIZE OF TANK FOUNDATION AREA DEPENDS ON THE SIZE OF ABOVE GROUND STORAGE TANK AND DISPENSER ASSEMBLY.
2. PROVIDE A MINIMUM SLOPE OF 2 % TOWARD THE SUMP PIT.
3. INSTALL IMPERMEABLE LINER AS PER MANUFACTURER'S RECOMMENDATIONS.



BARREL STORAGE AREA

BSA
SYMBOL

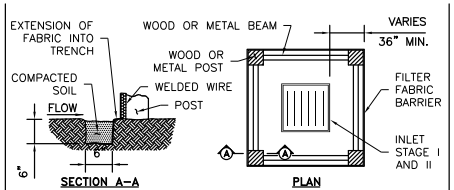
GENERAL NOTES:
1. ALTERNATIVELY, STORE BARRELS IN AN ENCLOSED BUILDING OR SHED.
2. INSTALL IMPERMEABLE LINER AS PER MANUFACTURER'S RECOMMENDATIONS. 60 mil MINIMUM.
3. CONSTRUCT BERMED AREA WITH VOLUME GREATER THAN OR EQUAL TO 110% VOLUME OF BARRELS.



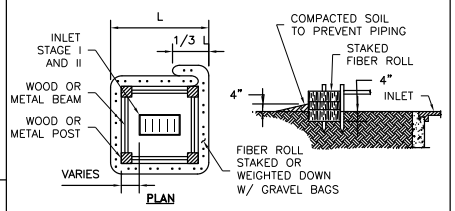
INLET PROTECTION BARRIERS FOR STAGE II INLETS

IPB-II
SYMBOL

GENERAL NOTES:
1. REMOVE SEDIMENT DEPOSIT WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-THIRD THE HEIGHT OF THE BARRIER.
2. GRAVEL BAGS SHALL NOT BLOCK THROAT OF INLET UNLESS DIRECTED BY ENGINEER.



INLET PROTECTION BARRIER WITH REINFORCED FILTER FABRIC

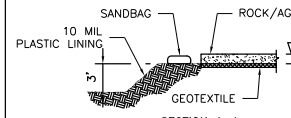


INLET PROTECTION BARRIER WITH FILTER ROLLS

GENERAL NOTES:
1. FIBER ROLLS WILL BE UTILIZED ONLY WHEN SITE CONDITIONS DO NOT PERMIT THE USE OF FILTER FABRIC BARRIER, AND AS APPROVED BY THE ENGINEER.

INLET PROTECTION BARRIERS FOR STAGE I INLETS

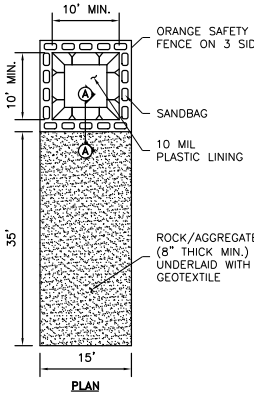
IPB
SYMBOL



SECTION A-A

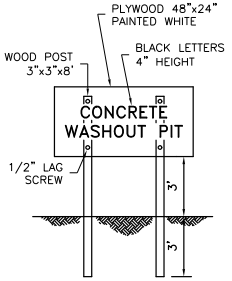
CONCRETE TRUCK WASHOUT AREA

CTW
SYMBOL

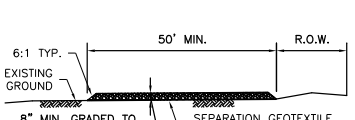


PLAN

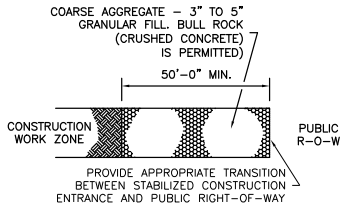
GENERAL NOTES:
1. POST A SIGN READING "CONCRETE WASHOUT PIT" NEXT TO THE PIT.
2. VERBALLY INSTRUCT THE CONCRETE TRUCK DRIVERS WHERE THE PIT IS AND TO WASHOUT THEIR TRUCKS IN THE PIT AND NOWHERE ELSE.
3. UPON THE CONCRETE SETTING UP (CURING, DRYING OUT), THE CONCRETE WASTE SHALL BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF PROPERLY BY THE CONTRACTOR. AFTER REMOVAL OF THE CONCRETE WASTE, THE WASHOUT PIT SHALL BE FILLED WITH CLEAN FILL MATERIAL AND COMPACTED TO IN-SITU CONDITIONS, OR AS DIRECTED BY THE PROJECT SPECIFICATIONS.
4. CONCRETE WASHOUT PITS SHALL NOT BE LOCATED DIRECTLY ADJACENT TO, NOR AT ANY TIME DRAIN INTO THE STORM SEWER SYSTEM OR ANY OTHER SWALE, DITCH, OR WATERWAY.
5. CONSTRUCT ENTRY ROAD AND BOTTOM OF WASHOUT AREA TO SUPPORT EXPECTED LOADINGS FROM TRUCKS EQUIPMENT.



SIGN DETAIL (OR EQUIVALENT)



PROFILE



PLAN

STABILIZED CONSTRUCTION ACCESS

SC-1
SYMBOL

GENERAL NOTES:
1. MINIMUM LENGTH IS AS SHOWN ON CONSTRUCTION DRAWINGS OR 50 FEET, WHICHEVER IS MORE.
2. CONSTRUCT AND MAINTAIN CONSTRUCTION EXIT WITH CONSTANT WIDTH ACROSS ITS LENGTH, INCLUDING ALL POINTS OF INGRESS OR EGRESS.
3. UNLESS SHOWN ON THE CONSTRUCTION DRAWINGS, STABILIZATION FOR OTHER AREAS WILL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION EXIT.
4. WHEN SHOWN ON THE CONSTRUCTION DRAWINGS, WIDEN OR LENGTHEN STABILIZED AREA TO ACCOMMODATE A TRUCK WASHING AREA. PROVIDE OUTLET SEDIMENT TRAP FOR THE TRUCK WASHING AREA.
5. PROVIDE PERIODIC TOP DRESSING WITH ADDITIONAL COARSE AGGREGATE TO MAINTAIN THE REQUIRED DEPTH OR WHEN SURFACE BECOMES PACKED WITH MUD.
6. PERIODICALLY TURN AGGREGATE TO EXPOSE A CLEAN DRIVING SURFACE.
7. MINIMUM 14' WIDTH FOR ONE WAY TRAFFIC AND 20' WIDTH FOR TWO WAY TRAFFIC.

DATE: 5/29/2026 10:49:25 AM
FILE: \\hrgreen.com\hrg\Data\2024\24041881\DesignData\4 - Design\Supporting Documents\Standards - Plan Set - DGN Files\WC STORM WATER POLLUTION PREVENTION PLAN DETAILS.dgn

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
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Firm No. F-11278

STORM WATER POLLUTION PREVENTION PLAN DETAILS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		102

SUMMARY OF EARTHWORK QUANTITIES

End Area Volume Report

Report Created: Monday, March 30, 2026
Time: 5:14:19 PM

Cross Section Set Name: BL_MATHIS-1
Alignment Name: BL_MATHIS
Input Grid Factor:
Note: All units in this report are in feet, square feet and cubic yards unless

Baseline Station	Station Quantities								
	Cut				Fill				Mass Ordinate
	Facto	Area	Volume	Adjuste	Facto	Area	Volume	Adjuste	
12+00.00 R1	1		55.325	55.325	1		5.026	5.026	50.3
13+00.00 R1	1		116.132	116.132	1		14.412	14.412	152.021
14+00.00 R1	1		116.019	116.019	1		11.64	11.64	256.399
15+00.00 R1	1		113.982	113.982	1		11.064	11.064	359.317
16+00.00 R1	1		104.122	104.122	1		12.313	12.313	451.125
17+00.00 R1	1		111.47	111.47	1		9.799	9.799	552.796
18+00.00 R1	1		104.363	104.363	1		10.331	10.331	646.828
19+00.00 R1	1		101.698	101.698	1		14.45	14.45	734.076
20+00.00 R1	1		113.403	113.403	1		12.618	12.618	834.861
21+00.00 R1	1		112.572	112.572	1		8.718	8.718	938.715
22+00.00 R1	1		116.426	116.426	1		5.771	5.771	1049.37
23+00.00 R1	1		111.74	111.74	1		12.661	12.661	1148.45
24+00.00 R1	1		105.567	105.567	1		16.421	16.421	1237.59
25+00.00 R1	1		92.929	92.929	1		22.35	22.35	1308.17
26+00.00 R1	1		89.956	89.956	1		24.022	24.022	1374.10
27+00.00 R1	1		97.897	97.897	1		19.972	19.972	1452.03
28+00.00 R1	1		105.713	105.713	1		16.021	16.021	1541.72
29+00.00 R1	1		91.278	91.278	1		22.242	22.242	1610.75
30+00.00 R1	1		89.238	89.238	1		33.549	33.549	1666.44
31+00.00 R1	1		90.163	90.163	1		22.114	22.114	1734.49
32+00.00 R1	1		94.548	94.548	1		17.254	17.254	1811.79
33+00.00 R1	1		104.114	104.114	1		21.402	21.402	1894.50
34+00.00 R1	1		98.202	98.202	1		18.263	18.263	1974.44
35+00.00 R1	1		116.008	116.008	1		4.85	4.85	2085.60
36+00.00 R1	1		119.229	119.229	1		7.059	7.059	2197.77
37+00.00 R1	1		104.73	104.73	1		6.832	6.832	2295.67
38+00.00 R1	1		103.387	103.387	1		10.306	10.306	2388.75
39+00.00 R1	1		104.375	104.375	1		20.905	20.905	2472.22
40+00.00 R1	1		102.966	102.966	1		13.021	13.021	2562.16
41+00.00 R1	1		98.146	98.146	1		15.777	15.777	2644.53
42+00.00 R1	1		95.096	95.096	1		14.64	14.64	2724.99
43+00.00 R1	1		101.235	101.235	1		10.345	10.345	2815.88
44+00.00 R1	1		102.501	102.501	1		18.028	18.028	2900.35
45+00.00 R1	1		97.417	97.417	1		31.208	31.208	2966.56
46+00.00 R1	1		102.461	102.461	1		27.173	27.173	3041.85
47+00.00 R1	1		103.604	103.604	1		34.565	34.565	3110.89
48+00.00 R1	1		56.92	56.92	1		60.335	60.335	3107.47
49+00.00 R1	1		92.494	92.494	1		72.424	72.424	3127.54
50+00.00 R1	1		101.565	101.565	1		33.071	33.071	3196.04
51+00.00 R1	1		97.31	97.31	1		30.733	30.733	3262.61
52+00.00 R1	1		100.661	100.661	1		17.672	17.672	3345.60
53+00.00 R1	1		97.875	97.875	1		23.184	23.184	3420.29
54+00.00 R1	1		101.896	101.896	1		20.535	20.535	3501.66
55+00.00 R1	1		97.871	97.871	1		14.528	14.528	3585.00
56+00.00 R1	1		107.778	107.778	1		10.051	10.051	3682.73
57+00.00 R1	1		101.961	101.961	1		13.85	13.85	3770.84
58+00.00 R1	1		108.218	108.218	1		18.459	18.459	3860.60
59+00.00 R1	1		106.662	106.662	1		21.91	21.91	3945.35
60+00.00 R1	1		104.229	104.229	1		22.611	22.611	4026.97
61+00.00 R1	1		97.155	97.155	1		22.574	22.574	4101.55
62+00.00 R1	1		99.993	99.993	1		7.692	7.692	4193.85
63+00.00 R1	1		120.621	120.621	1		7.949	7.949	4306.52
64+00.00 R1	1		122.42	122.42	1		2.464	2.464	4426.48
65+00.00 R1	1		107.637	107.637	1		8.692	8.692	4525.42
66+00.00 R1	1		99.483	99.483	1		23.055	23.055	4601.85
67+00.00 R1	1		106.067	106.067	1		13.267	13.267	4694.65
68+00.00 R1	1		132.232	132.232	1		2.28	2.28	4824.60
69+00.00 R1	1		127.468	127.468	1		1.386	1.386	4950.68

End Area Volume Report

Report Created: Monday, March 30, 2026
Time: 5:14:19 PM

Cross Section Set Name: BL_MATHIS-1
Alignment Name: BL_MATHIS
Input Grid Factor:
Note: All units in this report are in feet, square feet and cubic yards unless

Baseline Station	Station Quantities								
	Cut				Fill				Mass Ordinate
	Facto	Area	Volume	Adjuste	Facto	Area	Volume	Adjuste	
70+00.00 R1	1		117.367	117.367	1		1.945	1.945	5066.11
71+00.00 R1	1		124.451	124.451	1		0.98	0.98	5189.58
72+00.00 R1	1		122.562	122.562	1		0.745	0.745	5311.39
73+00.00 R1	1		110.276	110.276	1		3.082	3.082	5418.59
74+00.00 R1	1		106.801	106.801	1		5.546	5.546	5519.84
75+00.00 R1	1		113.869	113.869	1		8.141	8.141	5625.57
76+00.00 R1	1		165.148	165.148	1		6.468	6.468	5784.25
77+00.00 R1	1		156.548	156.548	1		12.604	12.604	5928.19
78+00.00 R1	1		181.578	181.578	1		8.289	8.289	6101.48
79+00.00 R1	1		164.81	164.81	1		18.131	18.131	6248.16
80+00.00 R1	1		111.391	111.391	1		30.166	30.166	6329.39
81+00.00 R1	1		47.077	47.077	1		2.174	2.174	6374.29
82+00.00 R1	1		112.022	112.022	1		14.646	14.646	6471.66
83+00.00 R1	1		101.926	101.926	1		13.216	13.216	6560.38
84+00.00 R1	1		94.066	94.066	1		24.531	24.531	6629.91
85+00.00 R1	1		89.944	89.944	1		36.747	36.747	6683.11
86+00.00 R1	1		88.779	88.779	1		12.198	12.198	6759.69
87+00.00 R1	1		89.683	89.683	1		14.308	14.308	6835.06
88+00.00 R1	1		86.779	86.779	1		13.2	13.2	6908.64
89+00.00 R1	1		97.224	97.224	1		13.665	13.665	6992.20
90+00.00 R1	1		87.039	87.039	1		20.989	20.989	7058.25
91+00.00 R1	1		87.196	87.196	1		15.507	15.507	7129.94
92+00.00 R1	1		86.904	86.904	1		20.883	20.883	7195.96
93+00.00 R1	1		88.326	88.326	1		13.471	13.471	7270.82
94+00.00 R1	1		90.708	90.708	1		13.658	13.658	7347.87
95+00.00 R1	1		104.958	104.958	1		9.473	9.473	7443.35
96+00.00 R1	1		87.633	87.633	1		11.817	11.817	7519.17
97+00.00 R1	1		86.601	86.601	1		14.261	14.261	7591.51
98+00.00 R1	1		87.073	87.073	1		11.93	11.93	7666.65
99+00.00 R1	1		89.41	89.41	1		15.691	15.691	7740.37
100+00.00 R1	1		94.291	94.291	1		11.183	11.183	7823.48
101+00.00 R1	1		93.169	93.169	1		9.712	9.712	7906.93
102+00.00 R1	1		89.805	89.805	1		7.978	7.978	7988.76
103+00.00 R1	1		89.354	89.354	1		12.235	12.235	8065.88
104+00.00 R1	1		88.039	88.039	1		13.159	13.159	8140.76
105+00.00 R1	1		91.831	91.831	1		8.247	8.247	8224.34
106+00.00 R1	1		96.406	96.406	1		16.744	16.744	8304.00
107+00.00 R1	1		103.464	103.464	1		48.793	48.793	8358.67
108+00.00 R1	1		97.825	97.825	1		22.304	22.304	8434.19
109+00.00 R1	1		92.843	92.843	1		16.414	16.414	8510.62
110+00.00 R1	1		91.894	91.894	1		10.09	10.09	8592.43
111+00.00 R1	1		86.713	86.713	1		12.103	12.103	8667.04
112+00.00 R1	1		86.658	86.658	1		12.388	12.388	8741.31
113+00.00 R1	1		95.055	95.055	1		12.662	12.662	8823.70
114+00.00 R1	1		94.544	94.544	1		23.979	23.979	8894.26
115+00.00 R1	1		87.134	87.134	1		29.963	29.963	8951.44
116+00.00 R1	1		85.92	85.92	1		30.767	30.767	9006.59
117+00.00 R1	1		91.649	91.649	1		19.526	19.526	9078.71
118+00.00 R1	1		86.702	86.702	1		16.106	16.106	9149.31
119+00.00 R1	1		86.246	86.246	1		26.073	26.073	9209.48
120+00.00 R1	1		89.204	89.204	1		18.11	18.11	9280.58
121+00.00 R1	1		94.186	94.186	1		15.551	15.551	9359.21
122+00.00 R1	1		85.226	85.226	1		0	0	9444.44
122+70.93 R1	1		60.204	60.204	1		0	0	9504.64
Grand Total:			11313.037	11313.0			1808.39	1808.39	

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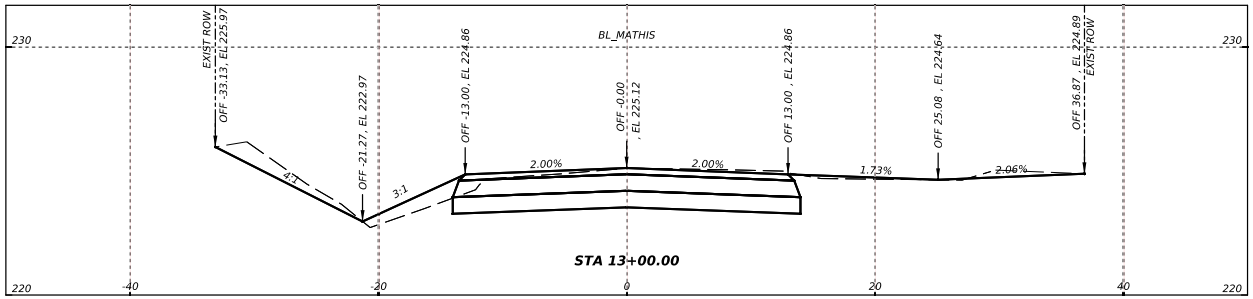
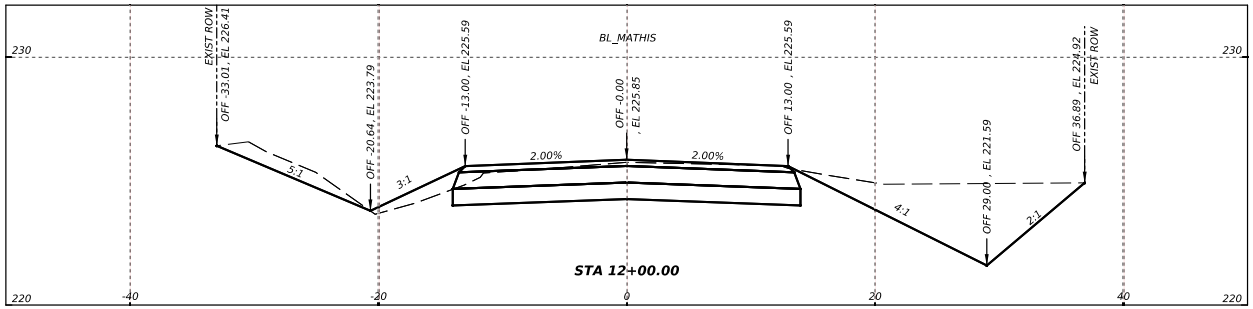
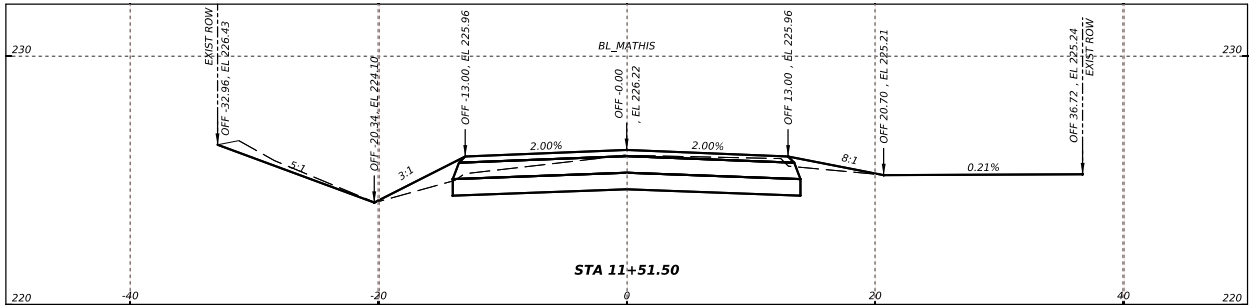
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

SUMMARY OF EARTHWORK QUANTITIES

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		103







STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 1 OF 50

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THE STATE OF TEXAS WALLER COUNTY

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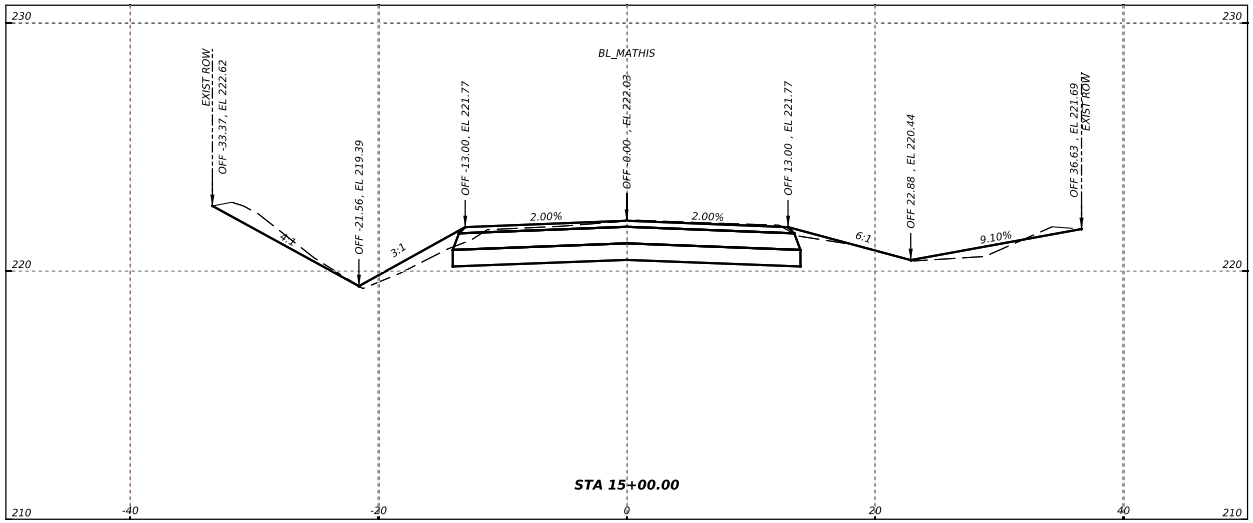
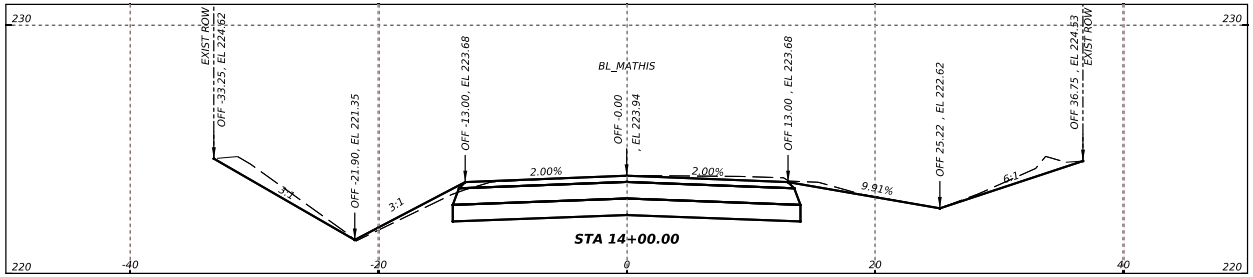
MATHIS RD CROSS SECTIONS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		104





STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 2 OF 50

REV. NO.	DATE	DESCRIPTION	BY

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MATHIS RD CROSS SECTIONS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		105

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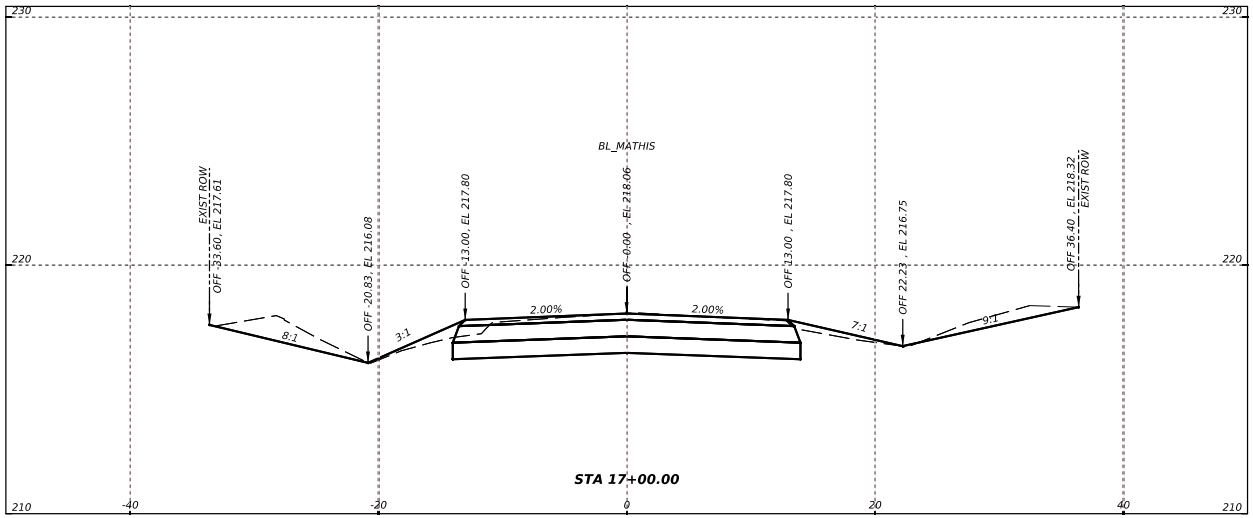

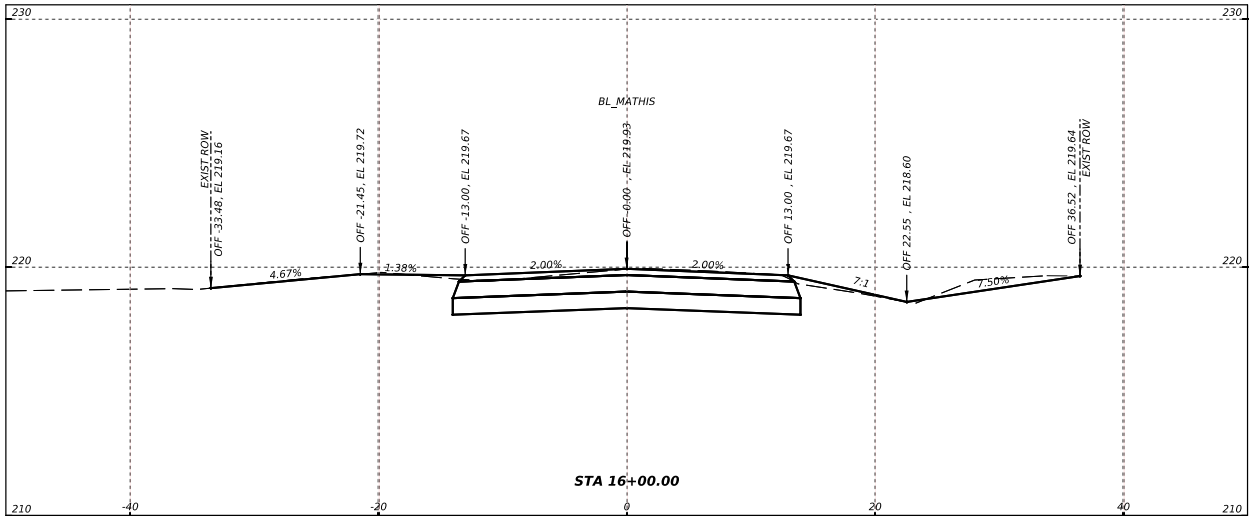

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 3 OF 50

REV. NO.	DATE	DESCRIPTION	BY

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MATHIS RD CROSS SECTIONS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		106

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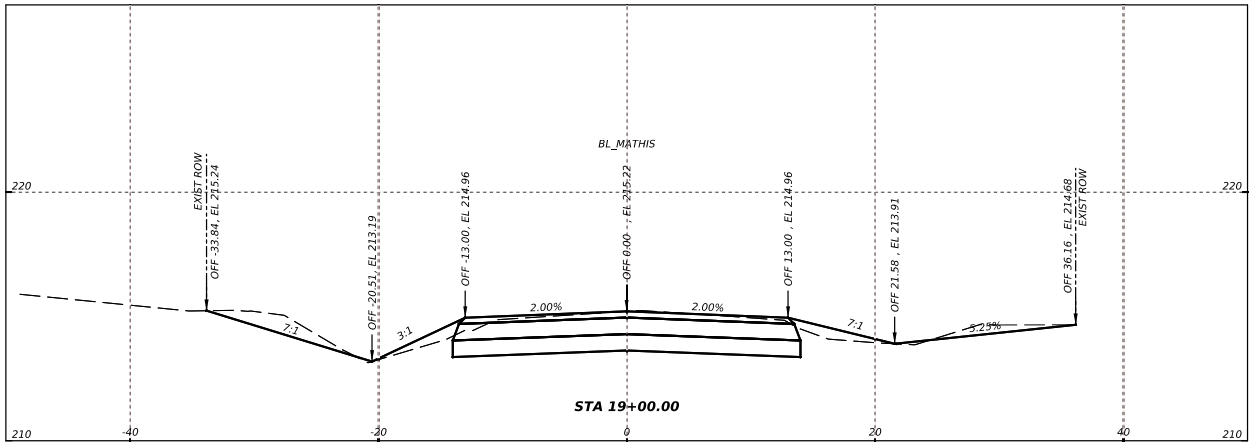

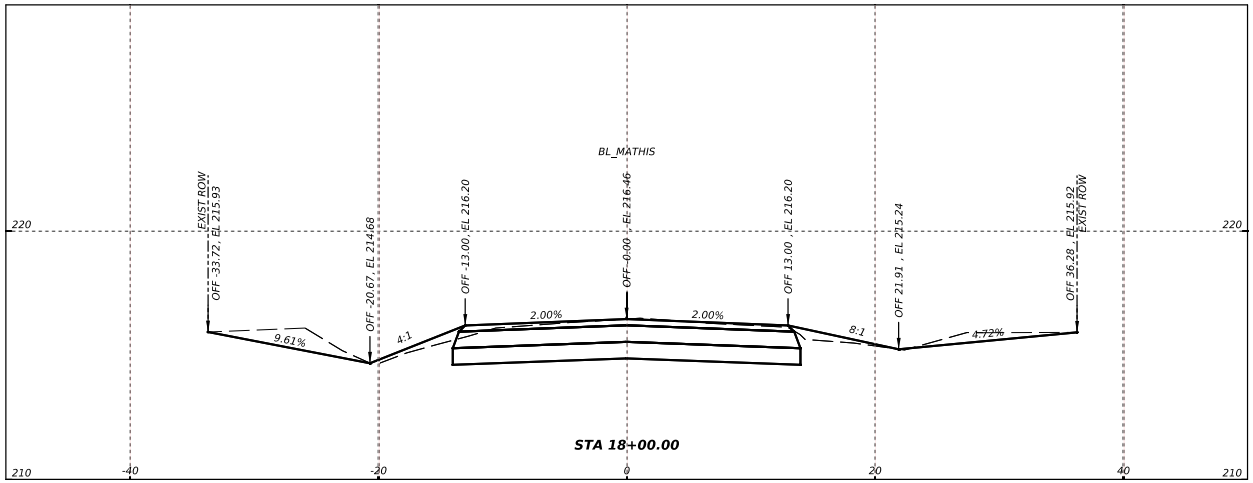

ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 4 OF 50

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MATHIS RD CROSS SECTIONS

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		107

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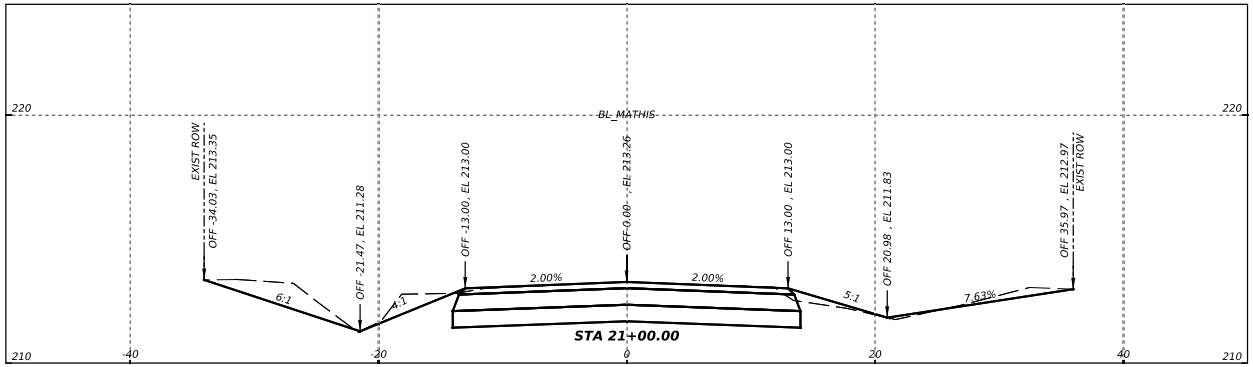

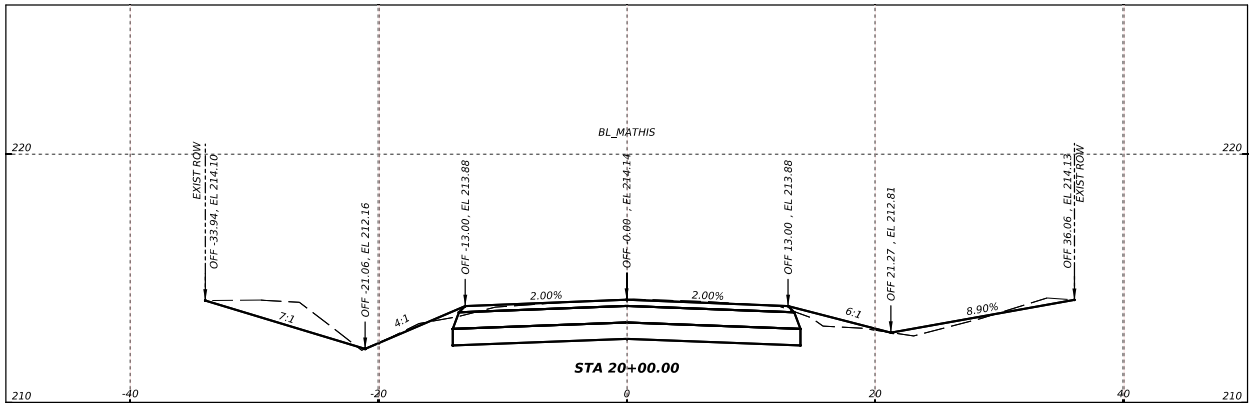

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 5 OF 50

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MATHIS RD
CROSS
SECTIONS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		108

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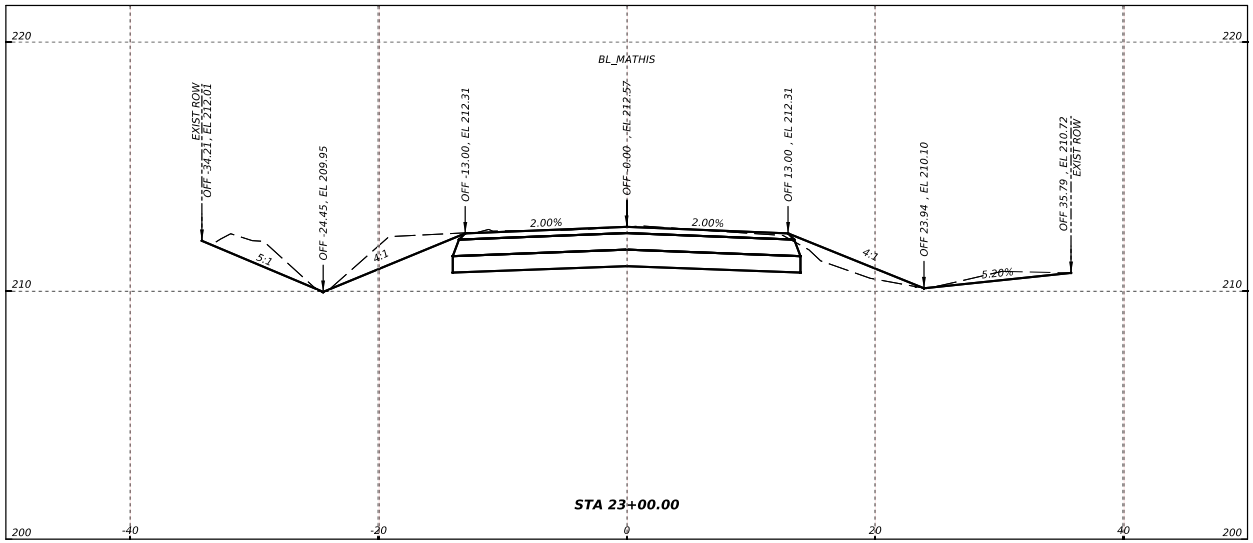

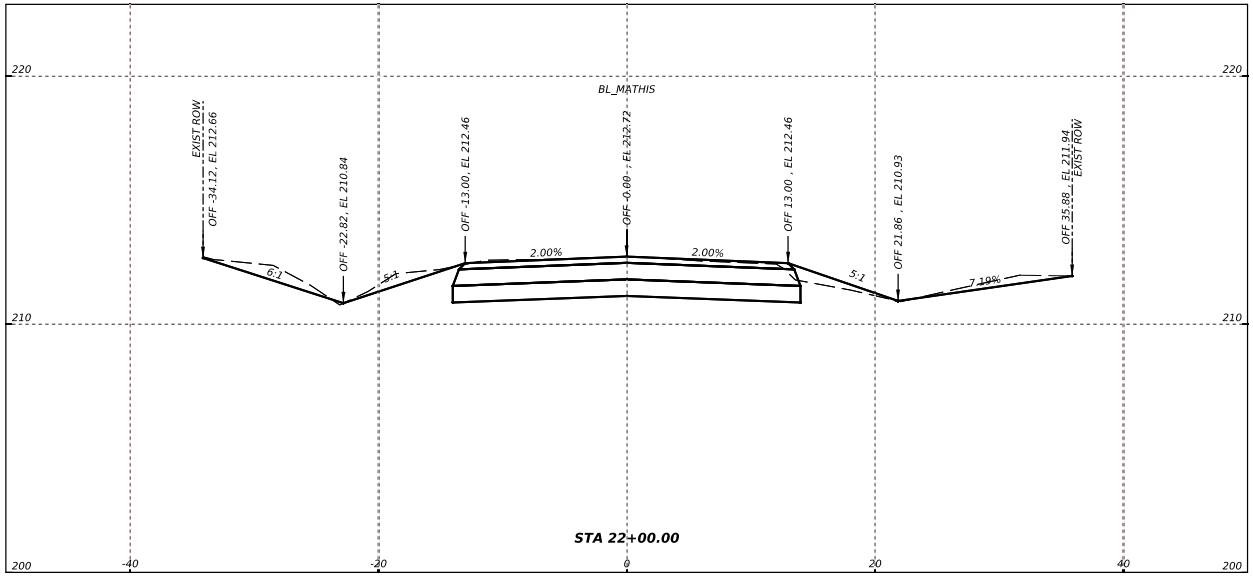

STATE OF TEXAS
ANDREW CRUMP
120041
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6/9/2026

1" = 10' HORIZONTAL
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SHEET 6 OF 50

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MATHIS RD CROSS SECTIONS

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		109

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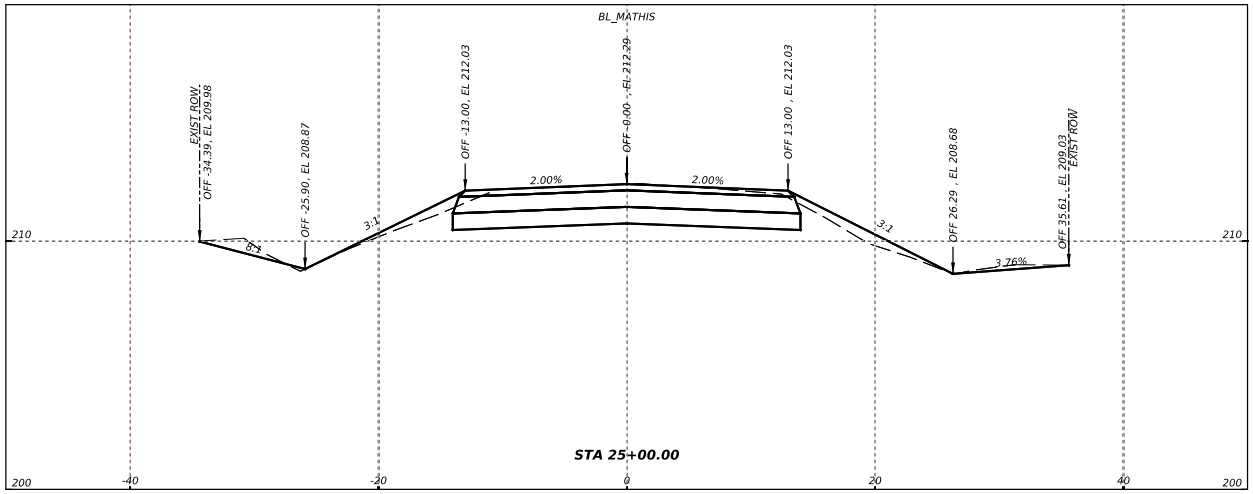

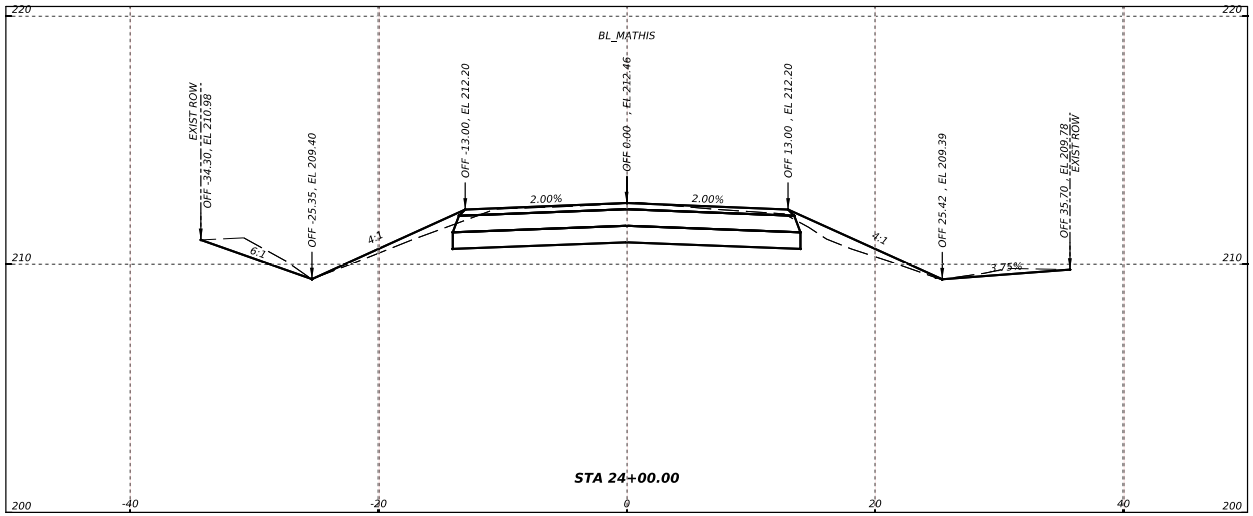

STATE OF TEXAS
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6/9/2026

1" = 10' HORIZONTAL
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SHEET 7 OF 50

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MATHIS RD
CROSS
SECTIONS

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		110

DATE: 6/9/2026 5:16:20 PM
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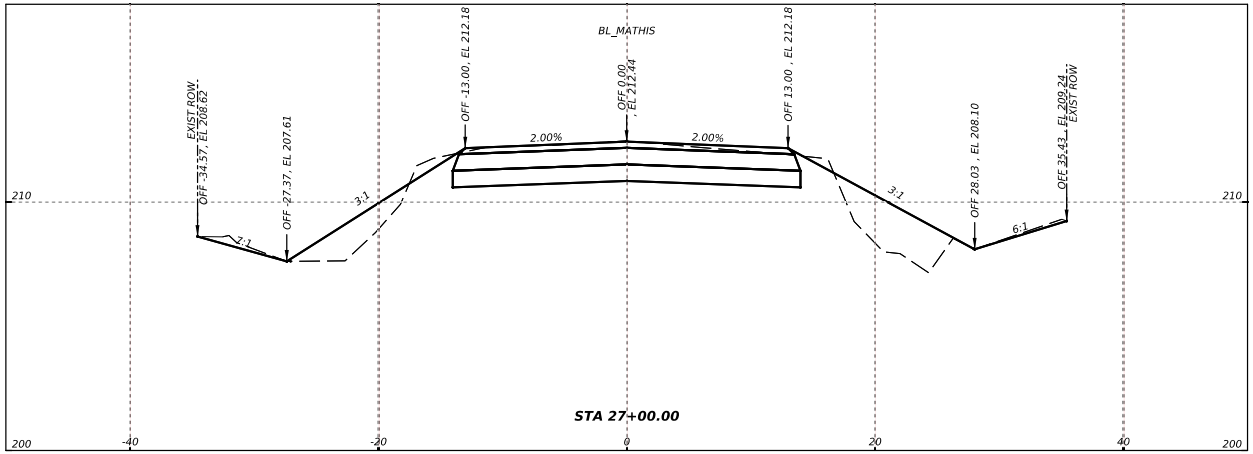

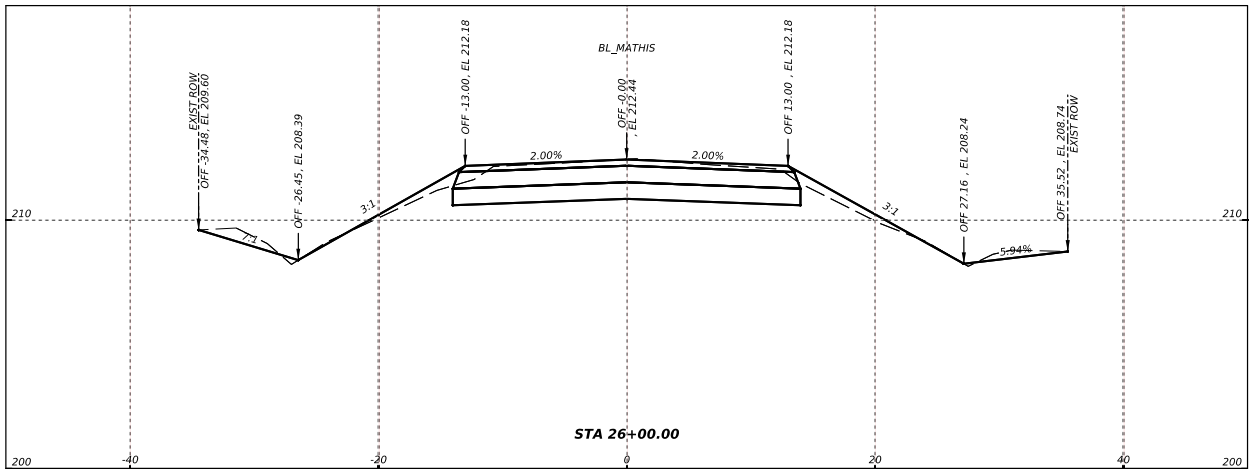

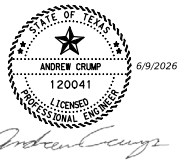

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 8 OF 50

REV. NO.	DATE	DESCRIPTION	BY

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MATHIS RD
CROSS
SECTIONS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		111

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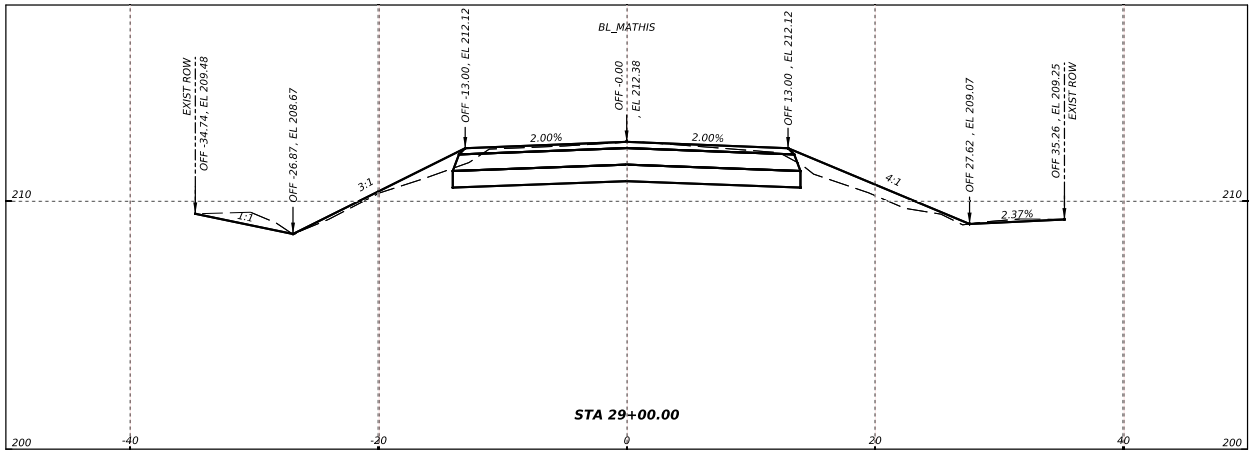

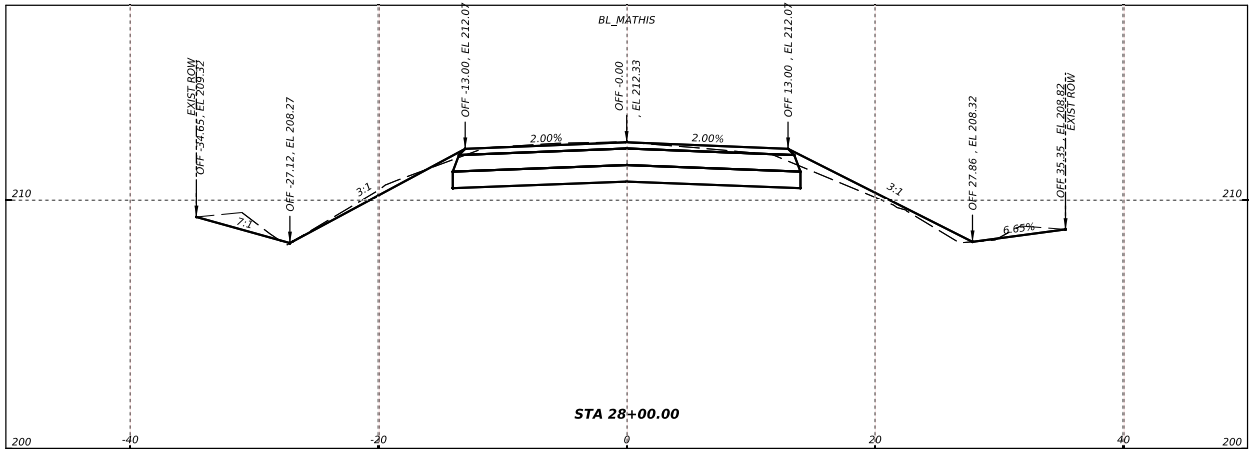

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 9 OF 50

DATE: 6/9/2026 5:16:21 PM
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REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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HRGreen.com
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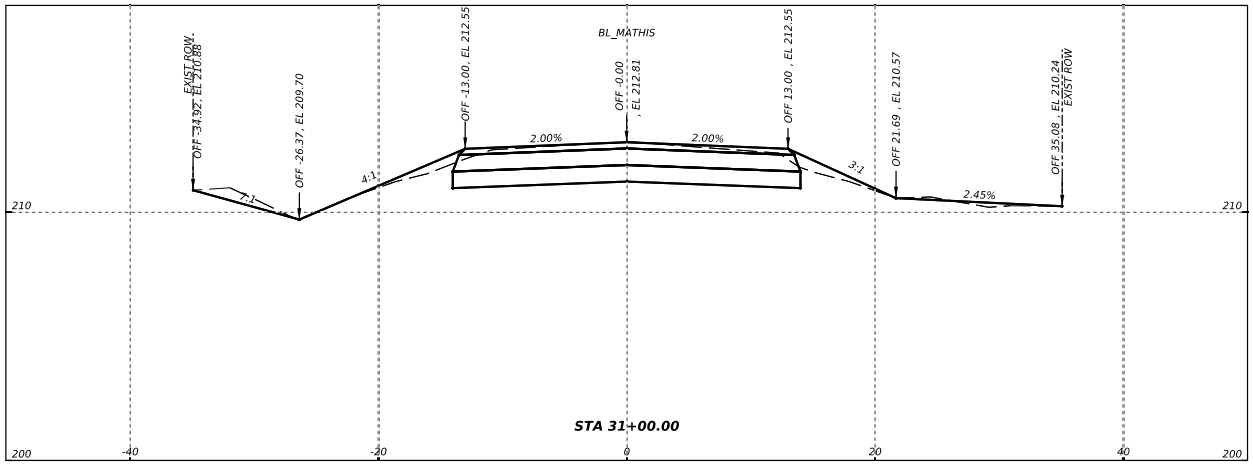
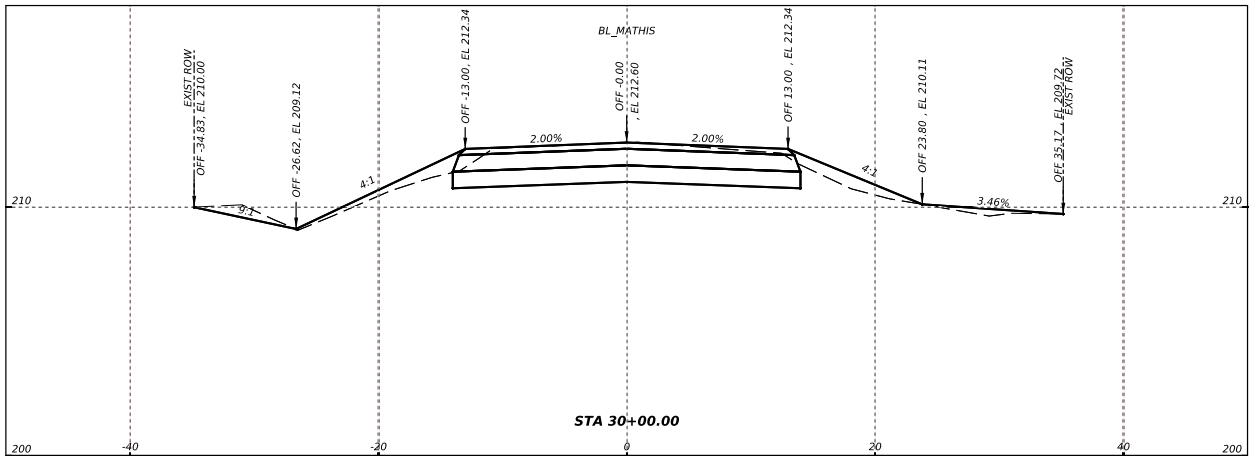
MATHIS RD CROSS SECTIONS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		112





ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
6/9/2026

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SHEET 10 OF 50

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS RD CROSS SECTIONS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		113

DATE: 6/9/2026 5:16:22 PM
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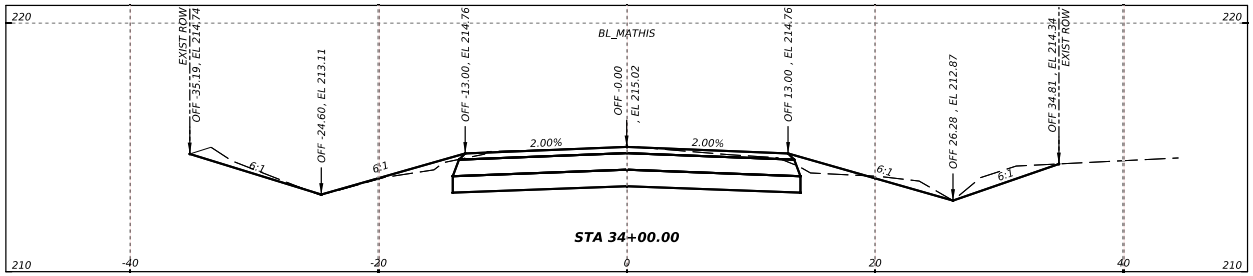

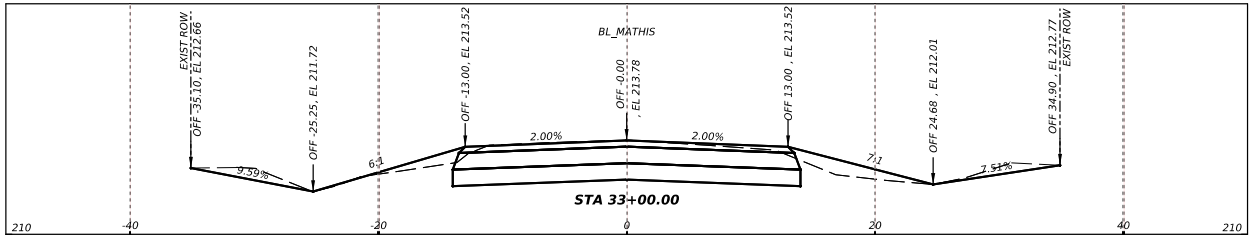

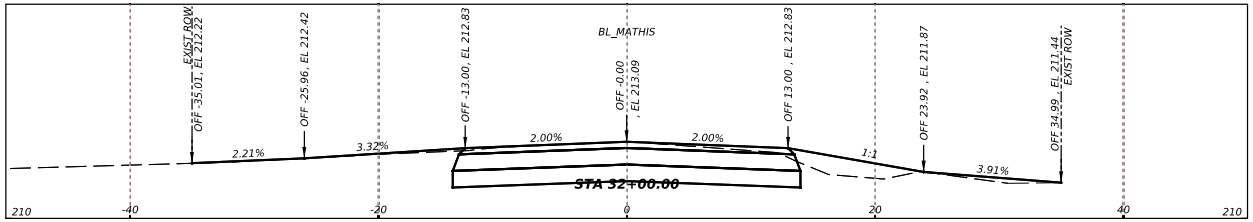

ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 11 OF 50

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS WALLER COUNTY

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HRGreen.com
Firm No. F-11278

MATHIS RD CROSS SECTIONS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		114

DATE: 6/9/2026 5:16:23 PM
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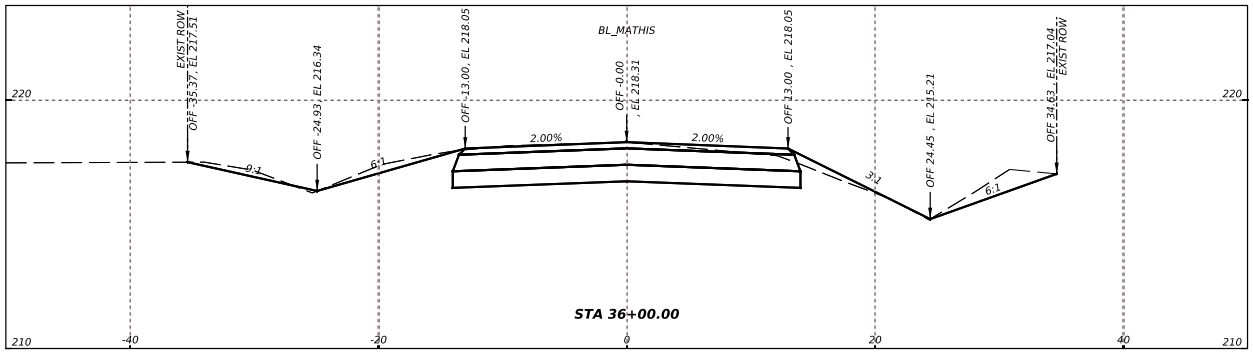

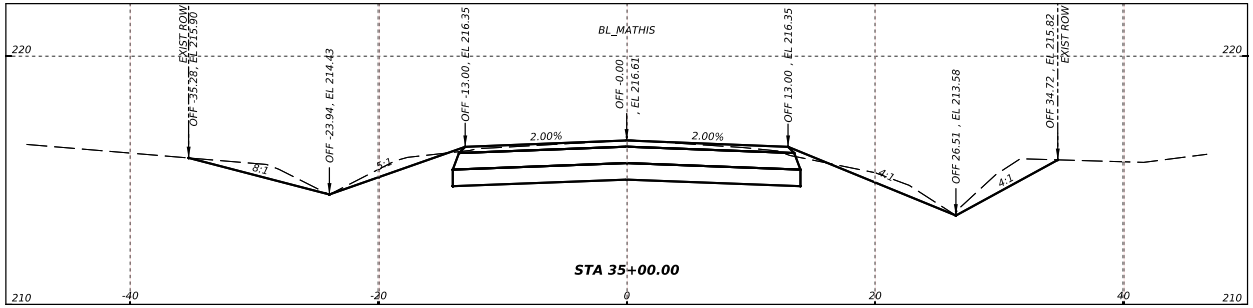

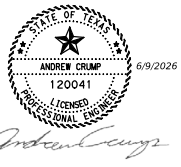

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 12 OF 50

DATE: 6/9/2026 5:16:24 PM
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REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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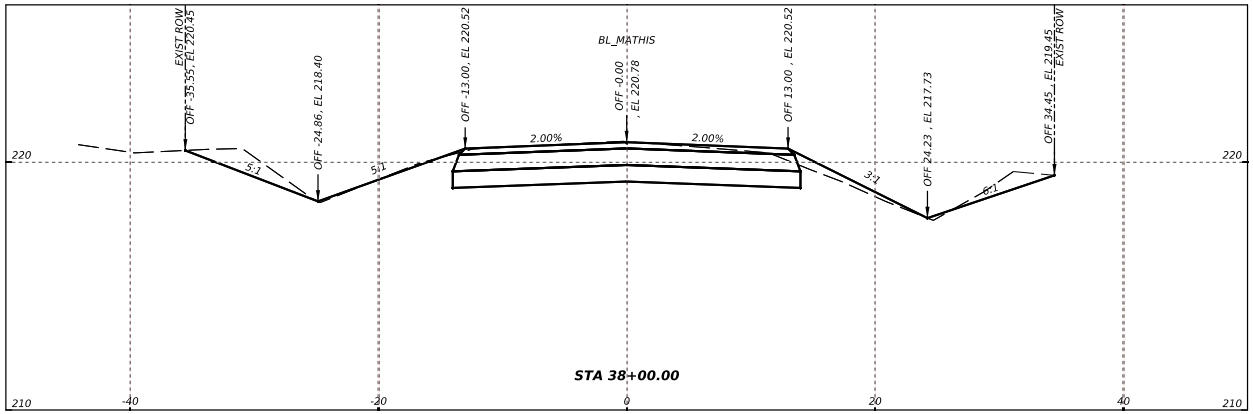
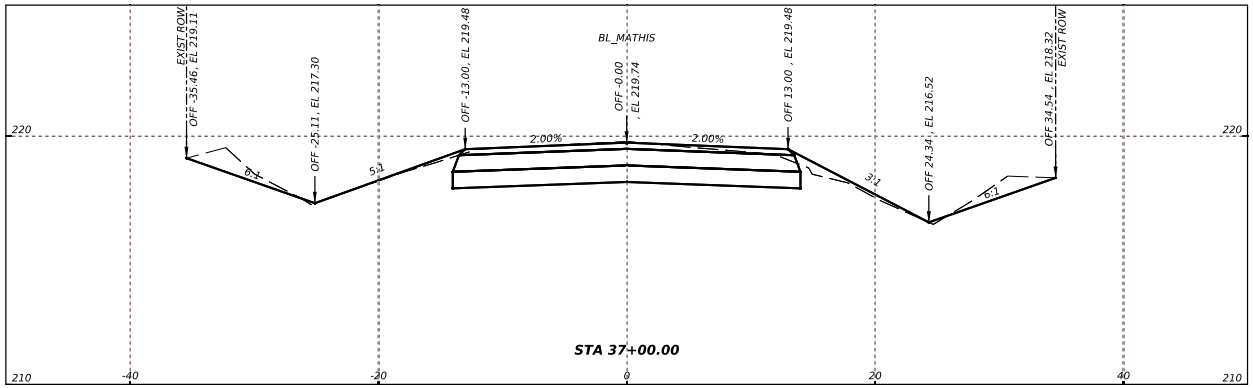
MATHIS RD CROSS SECTIONS

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		115





STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 13 OF 50

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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MATHIS RD CROSS SECTIONS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		116

DATE: 6/9/2026 5:16:25 PM
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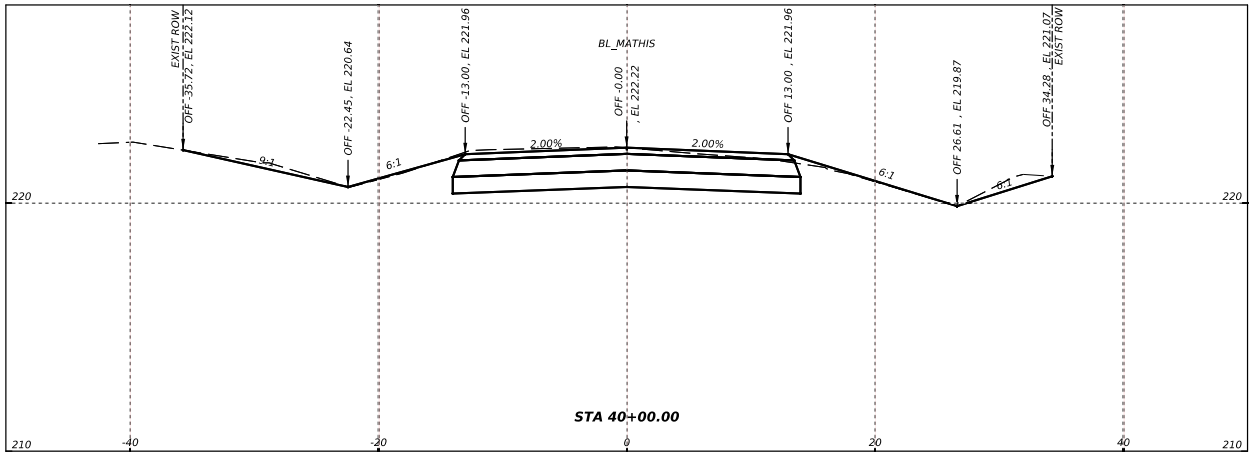

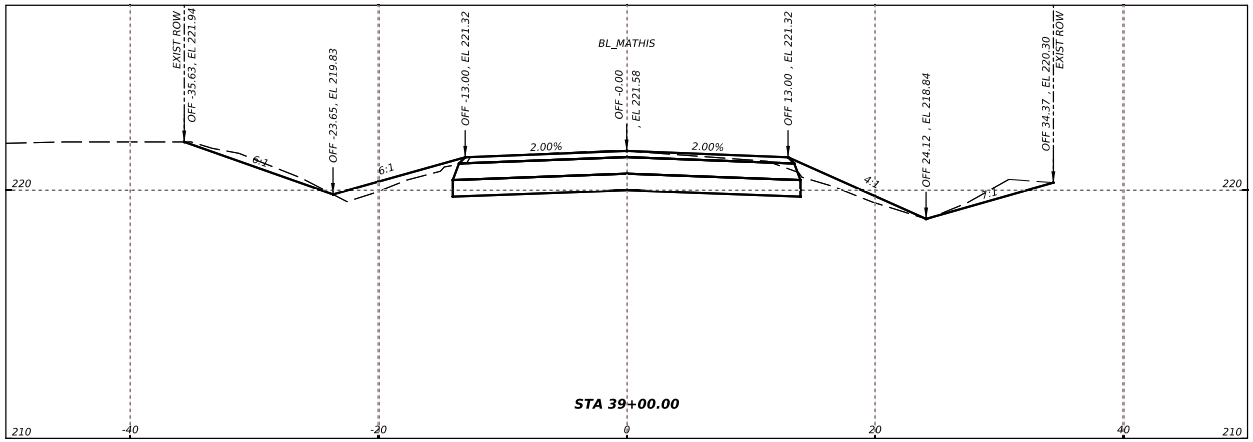

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 14 OF 50

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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WALLER COUNTY

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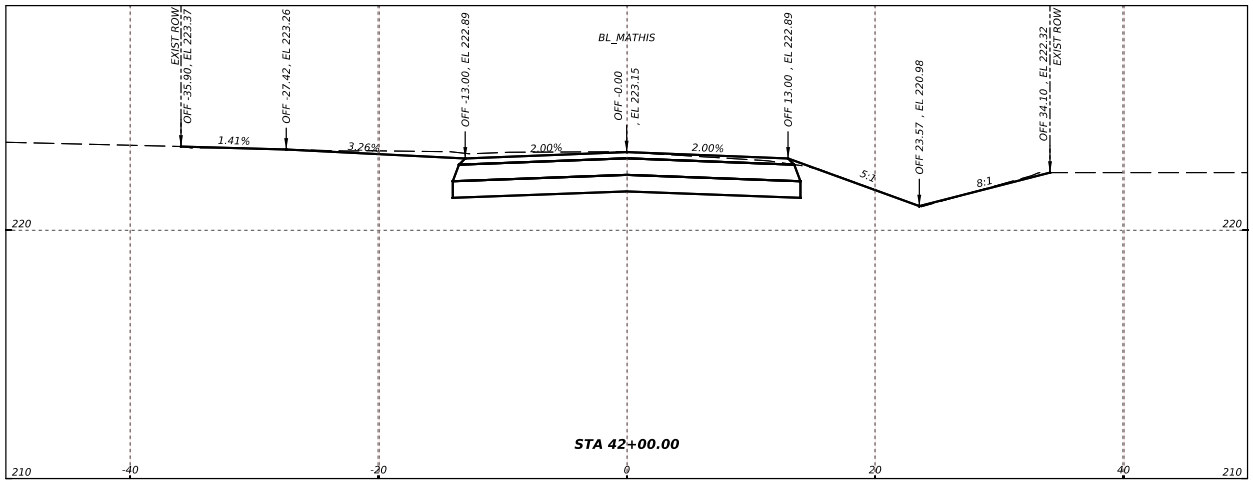
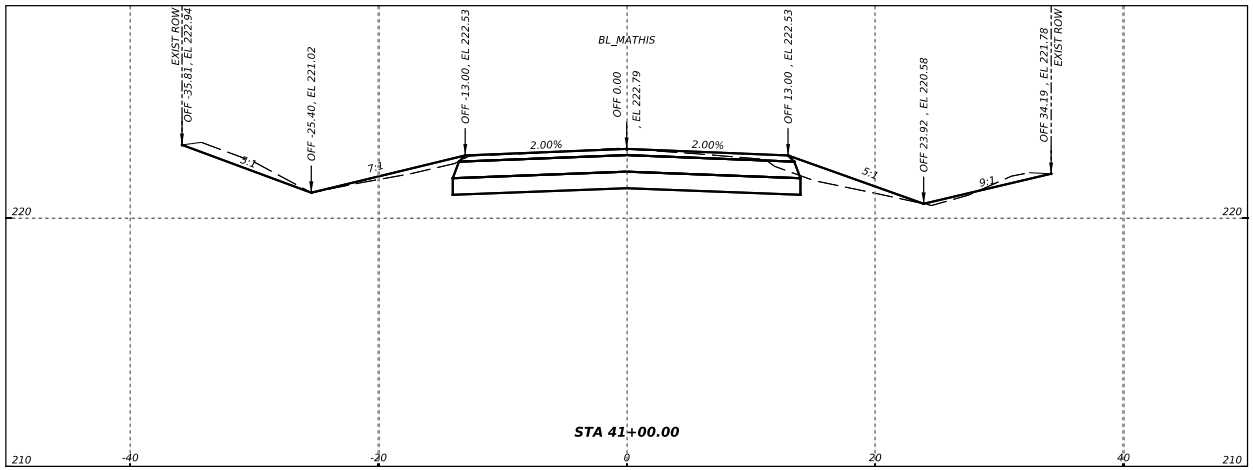
MATHIS RD
CROSS
SECTIONS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		117

DATE: 6/9/2026 5:16:26 PM
FILE: \\hrgreen.com\hrg\Data\2024\2404188\DesignData\4 - Design\Plan Set\12. Cross Sections\4188 PR XS 01.dgn





STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 15 OF 50

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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WALLER COUNTY

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MATHIS RD CROSS SECTIONS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		118

DATE: 6/9/2026 5:16:26 PM
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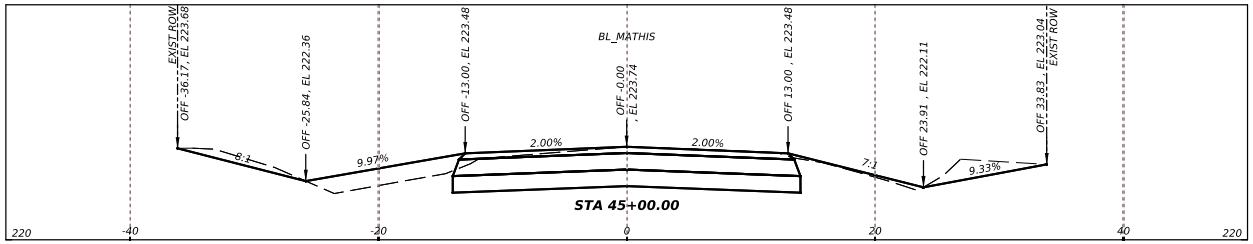

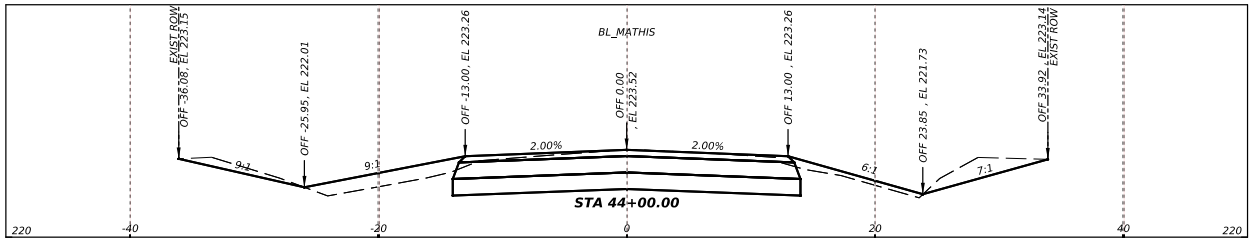

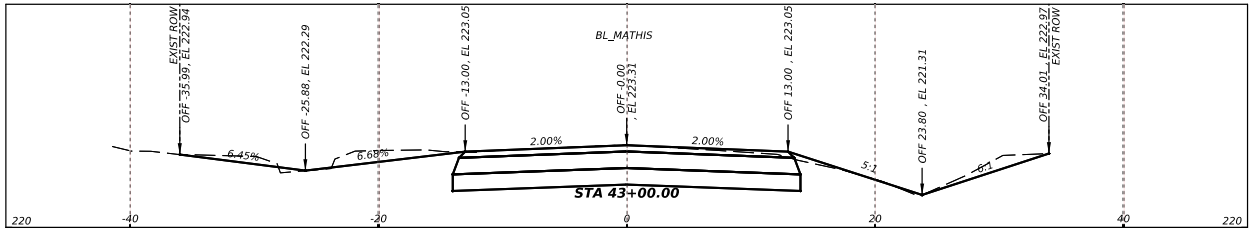

ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 16 OF 50

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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MATHIS RD
CROSS
SECTIONS

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST.	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		119

DATE: 6/9/2026 5:16:27 PM
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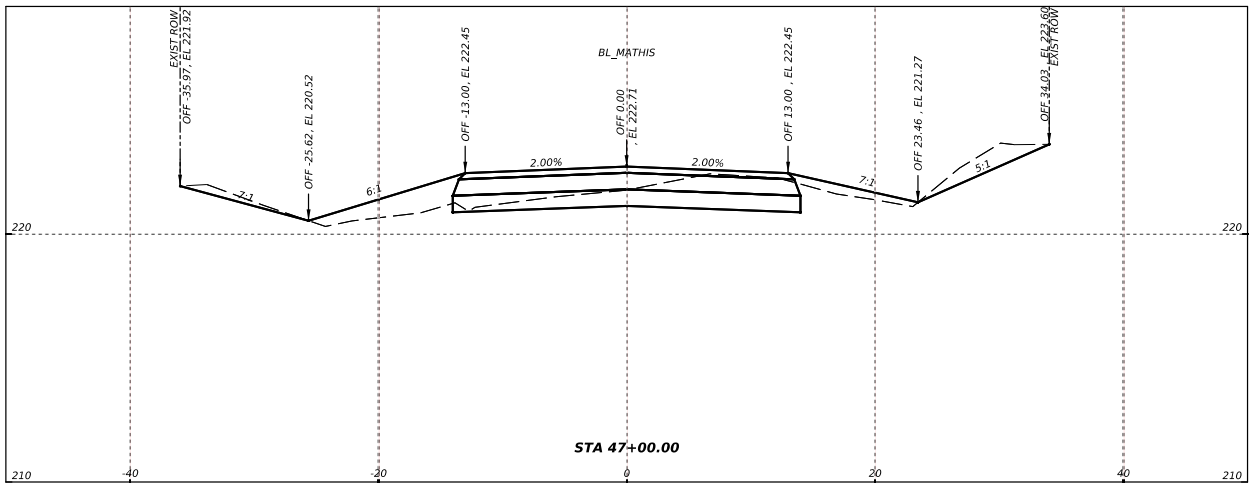

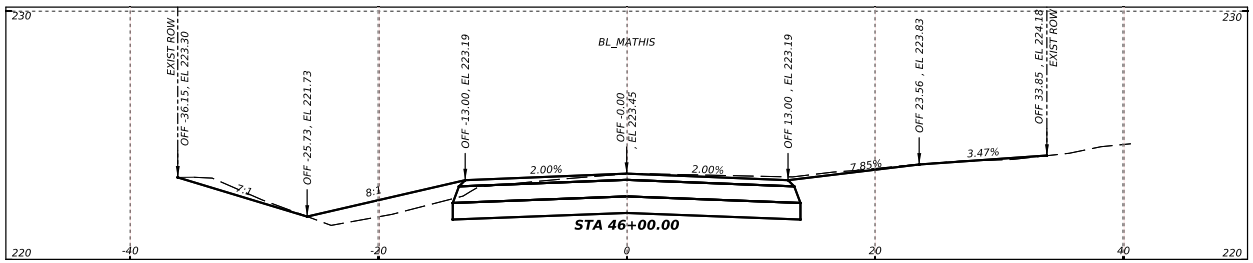

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 17 OF 50

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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(713) 965-9996
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Firm No. F-11278

MATHIS RD CROSS SECTIONS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		120

DATE: 6/9/2026 5:16:28 PM
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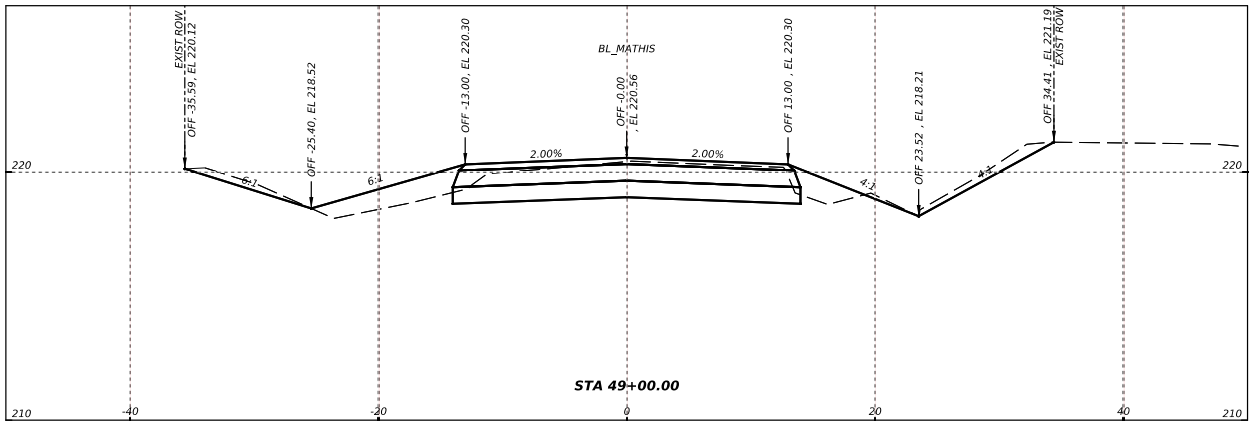

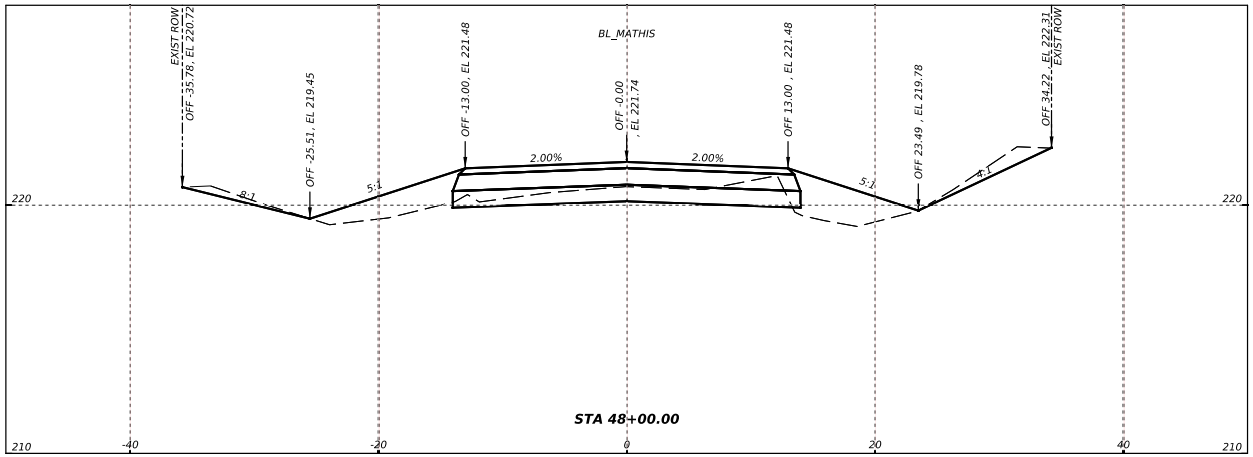

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 18 OF 50

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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MATHIS RD CROSS SECTIONS

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		121

DATE: 6/9/2026 5:16:29 PM
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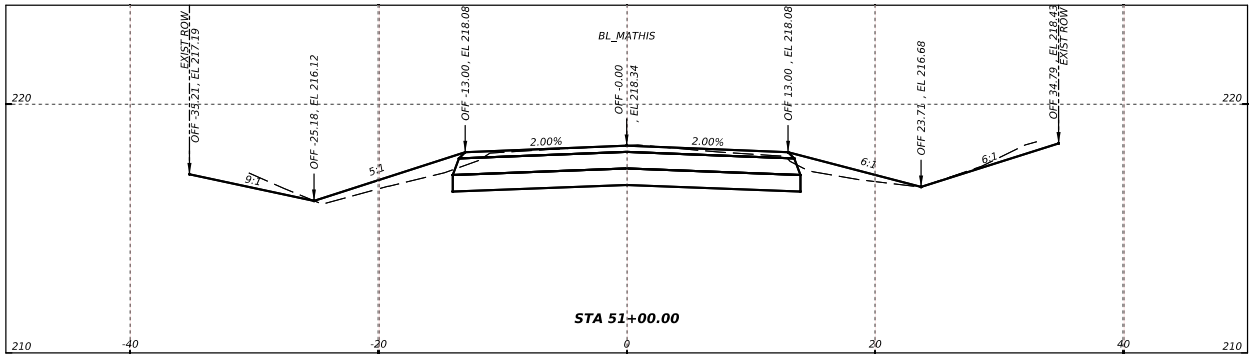

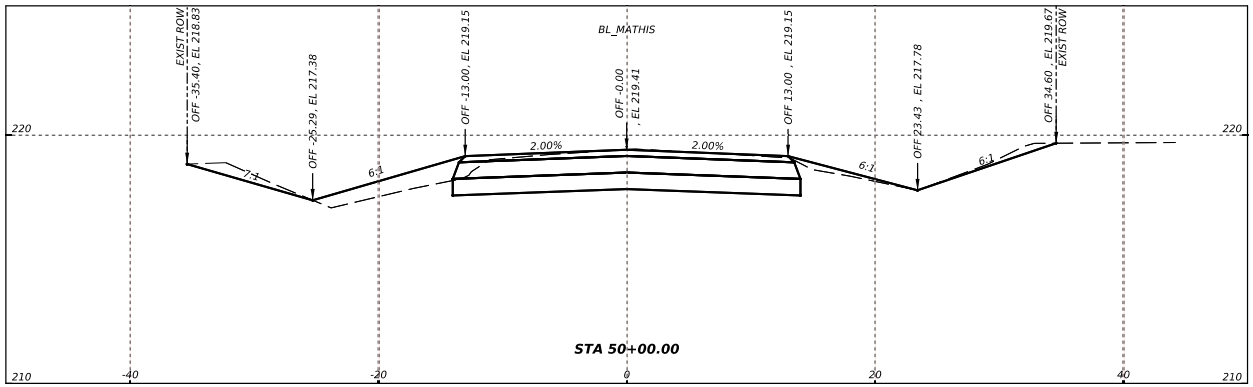

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 19 OF 50

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS · WALLER COUNTY

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HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS RD CROSS SECTIONS

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		122

DATE: 6/9/2026 5:16:30 PM
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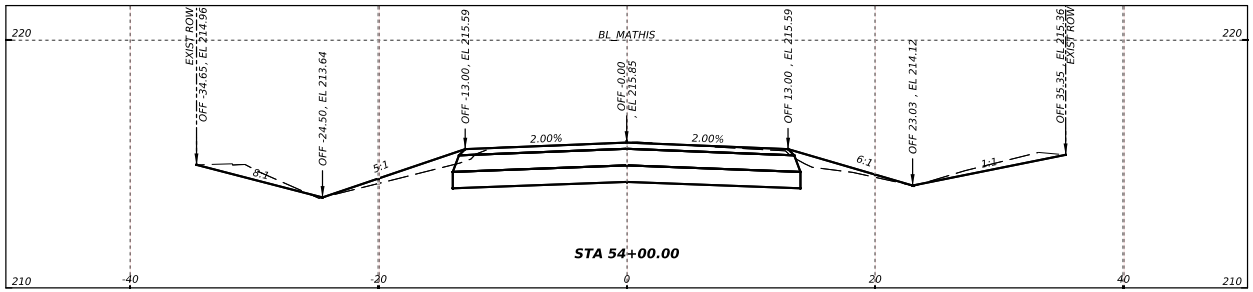

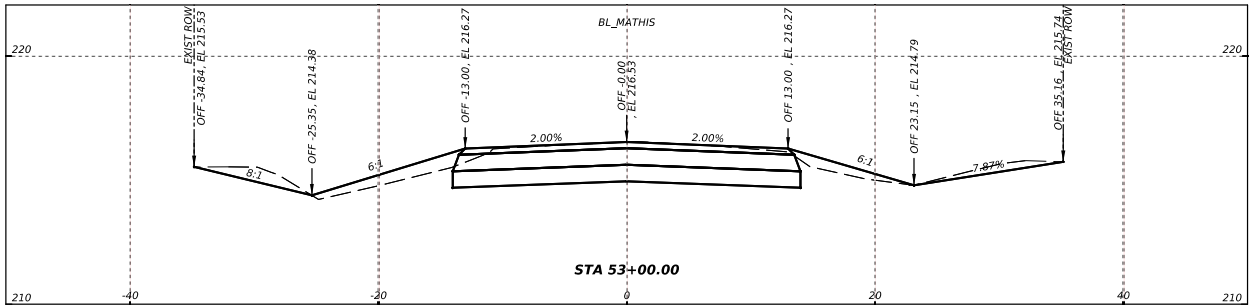

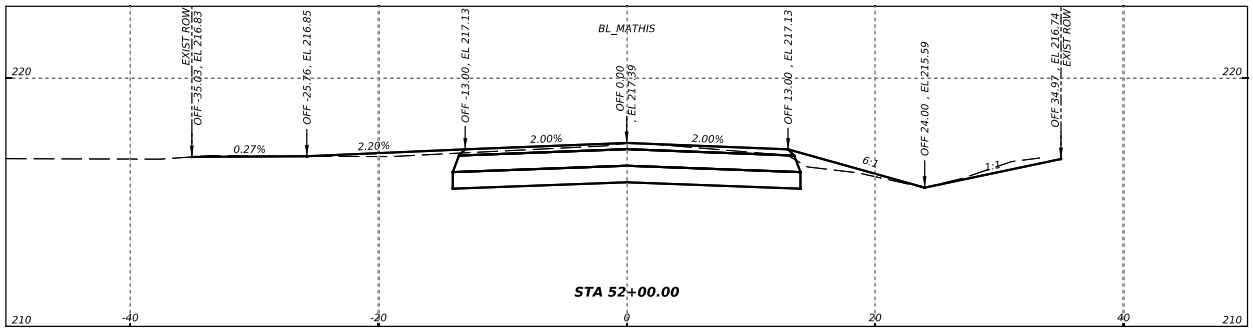

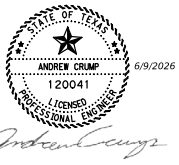

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 20 OF 50

DATE: 6/9/2026 5:16:31 PM
FILE: \\hrgreen.com\hrg\Data\2024\24041881\DesignData\4 - Design\Plan Set\12. Cross Sections\4188 PR XS 01.dgn

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS WALLER COUNTY

PREPARED BY:
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HOUSTON, TX 77042
(713) 965-9996
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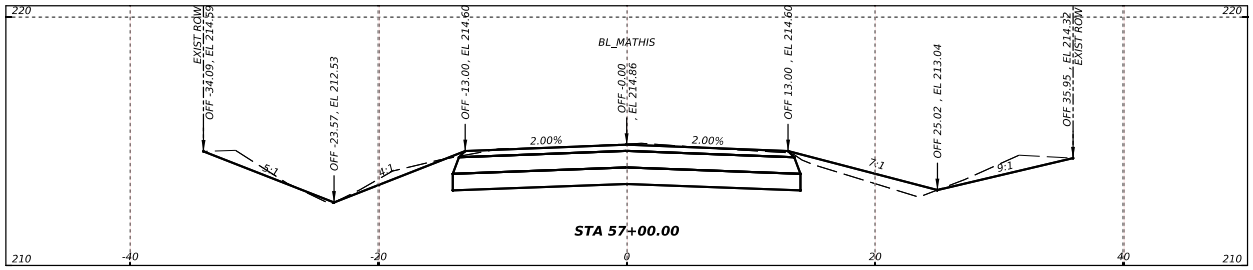
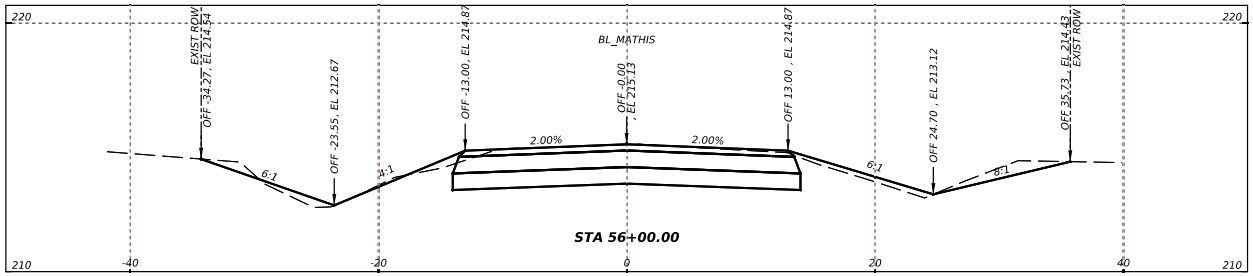
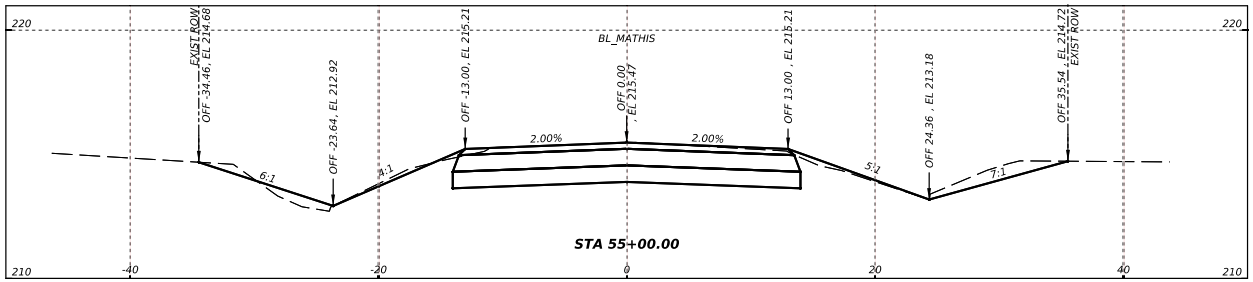
MATHIS RD CROSS SECTIONS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		123







STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 21 OF 50

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

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(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS RD CROSS SECTIONS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		124

DATE: 6/9/2026 5:16:32 PM
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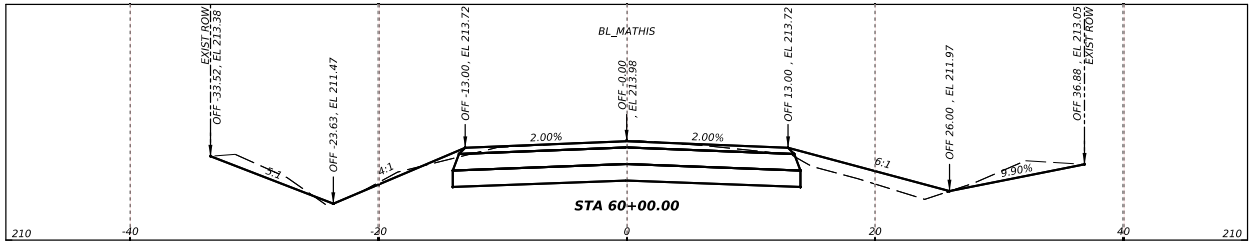

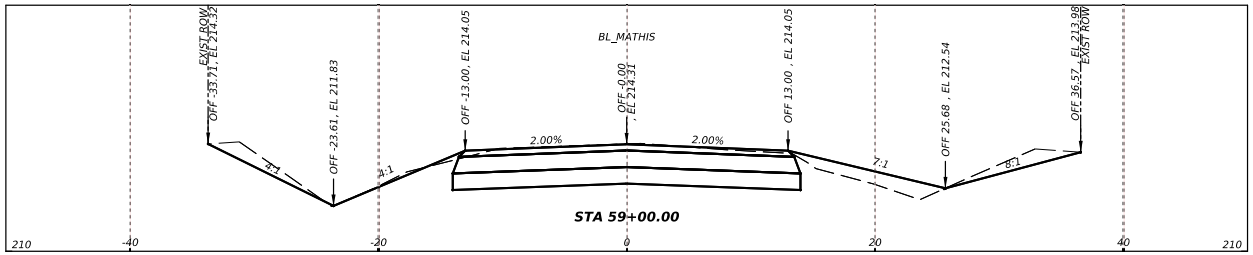

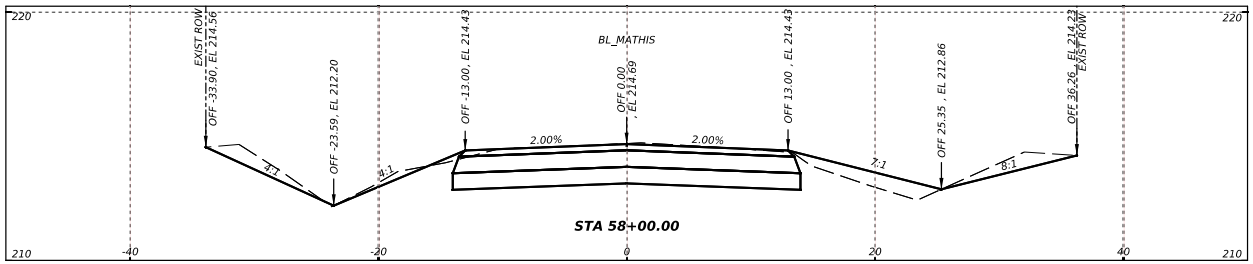

ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 22 OF 50

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
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HOUSTON, TX 77042
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HRGreen.com
Firm No. F-11278

MATHIS RD CROSS SECTIONS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		125

DATE: 6/9/2026 5:16:33 PM
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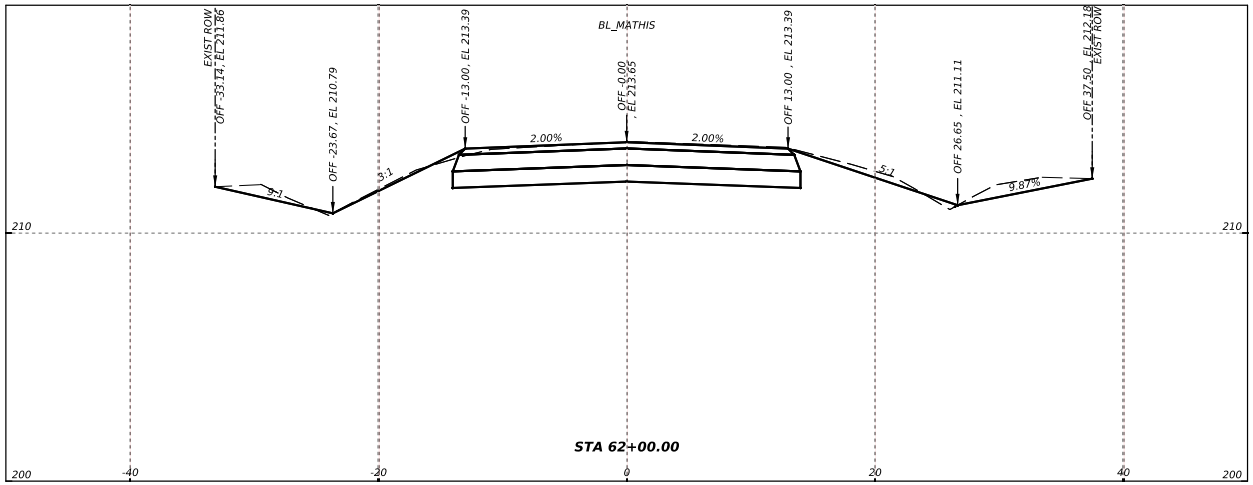

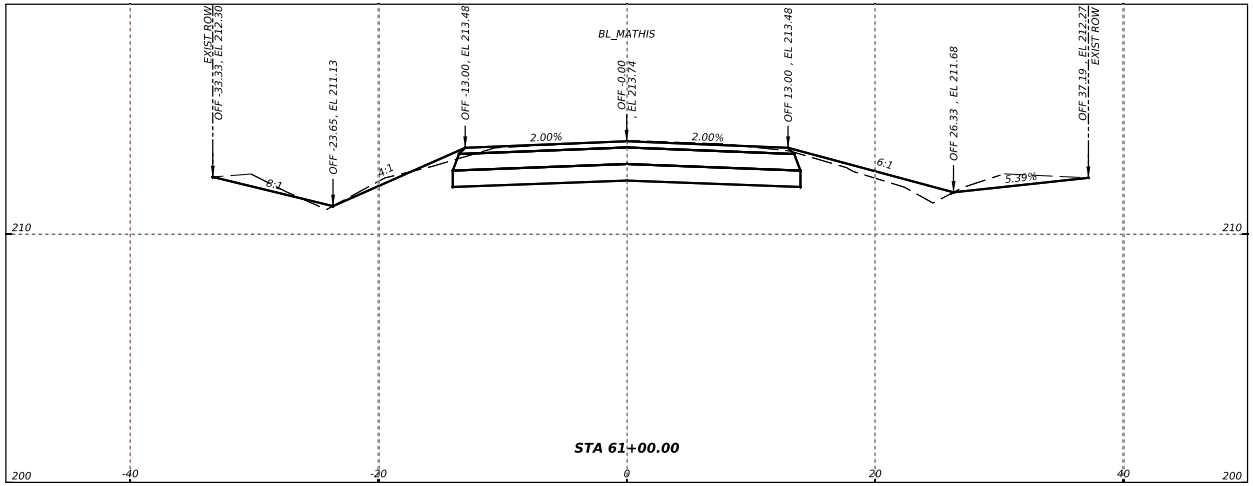

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 23 OF 50

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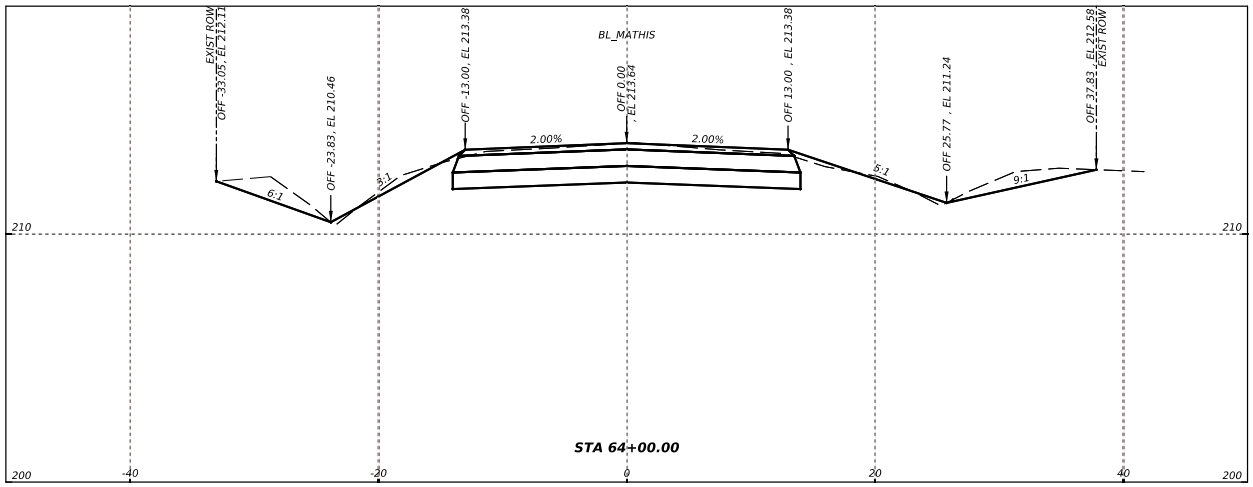
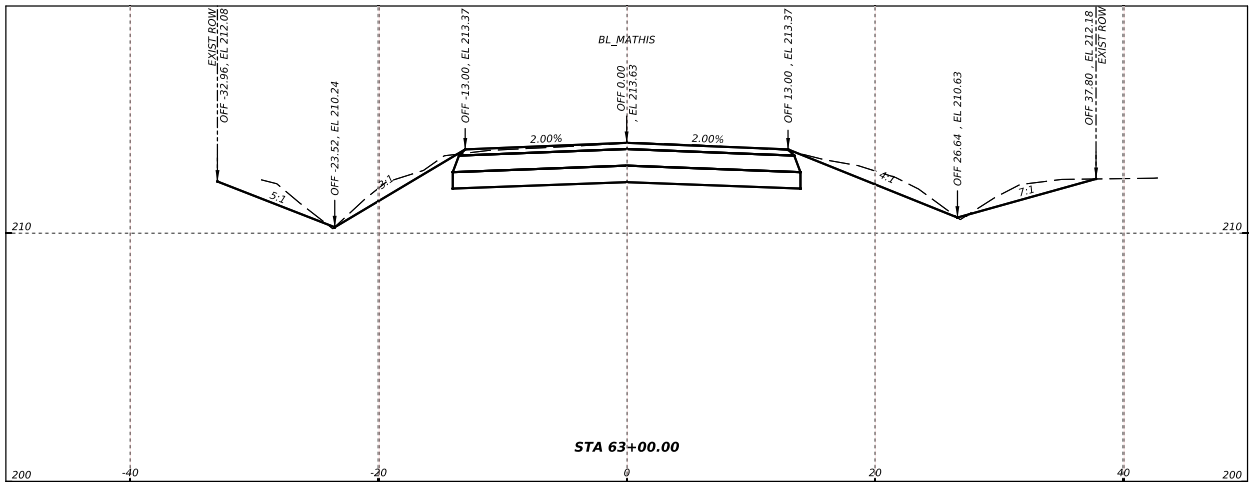
MATHIS RD CROSS SECTIONS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		126





STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 24 OF 50

REV. NO.	DATE	DESCRIPTION	BY

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MATHIS RD
CROSS
SECTIONS

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		127

DATE: 6/9/2026 5:16:34 PM
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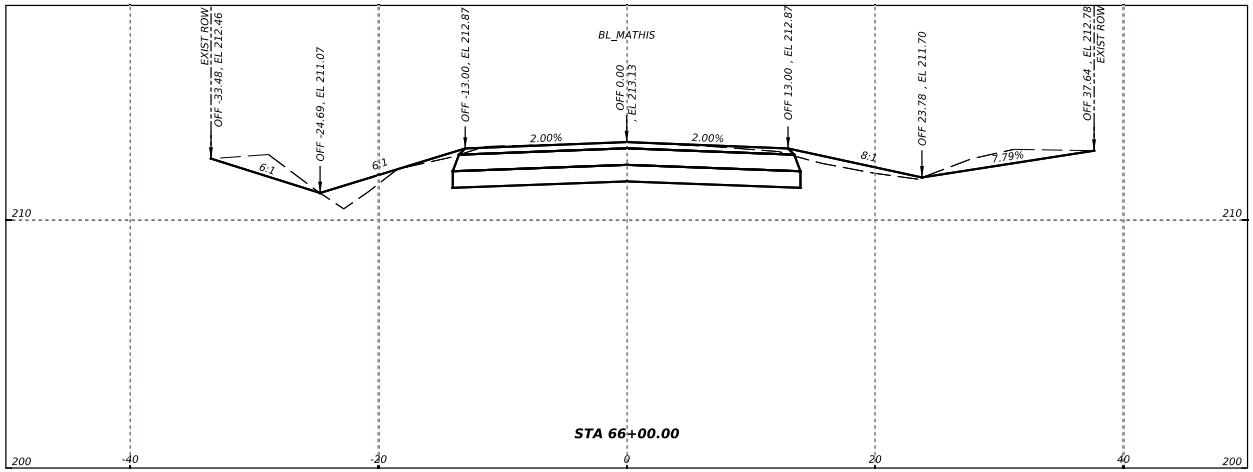

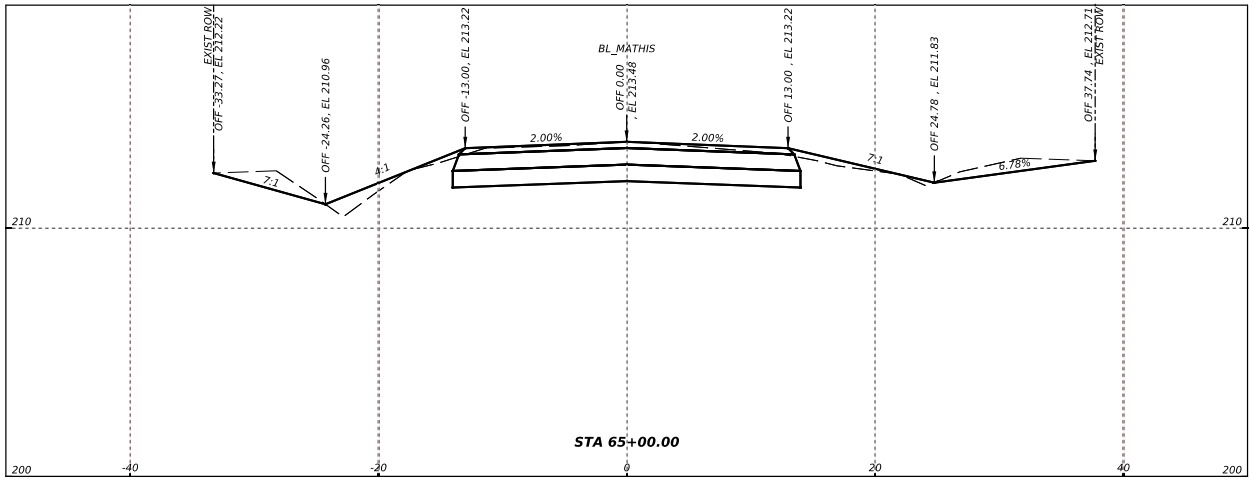

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 25 OF 50

DATE: 6/9/2026 5:16:35 PM
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REV. NO.	DATE	DESCRIPTION	BY

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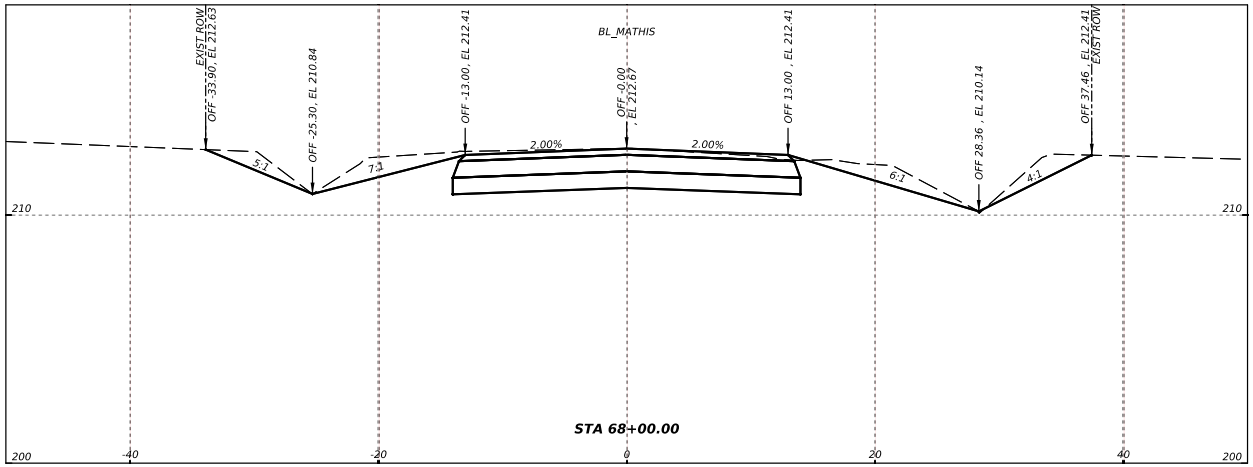
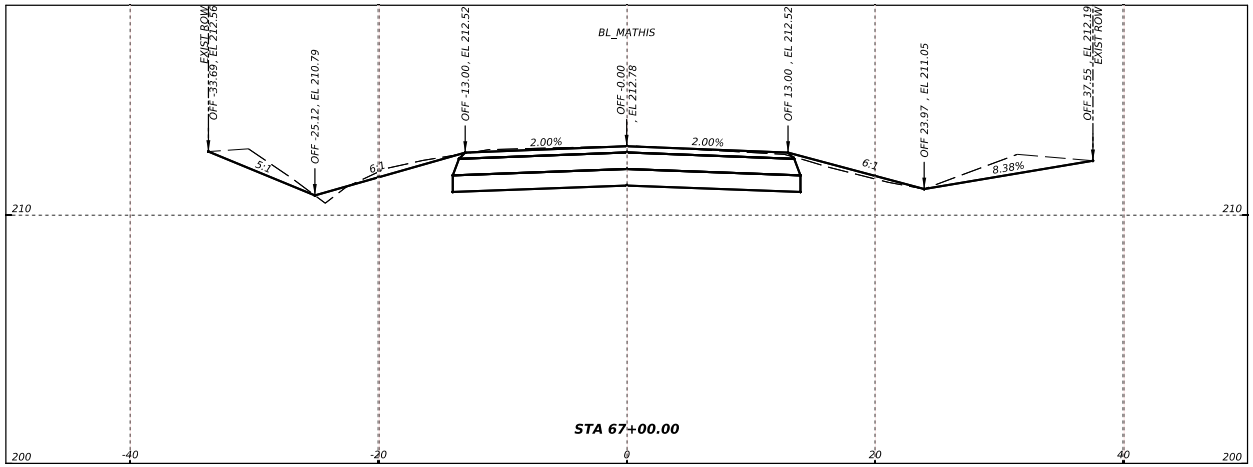
MATHIS RD
CROSS
SECTIONS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		128





STATE OF TEXAS
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6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 26 OF 50

REV. NO.	DATE	DESCRIPTION	BY

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MATHIS RD CROSS SECTIONS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		129

DATE: 6/9/2026 5:16:36 PM
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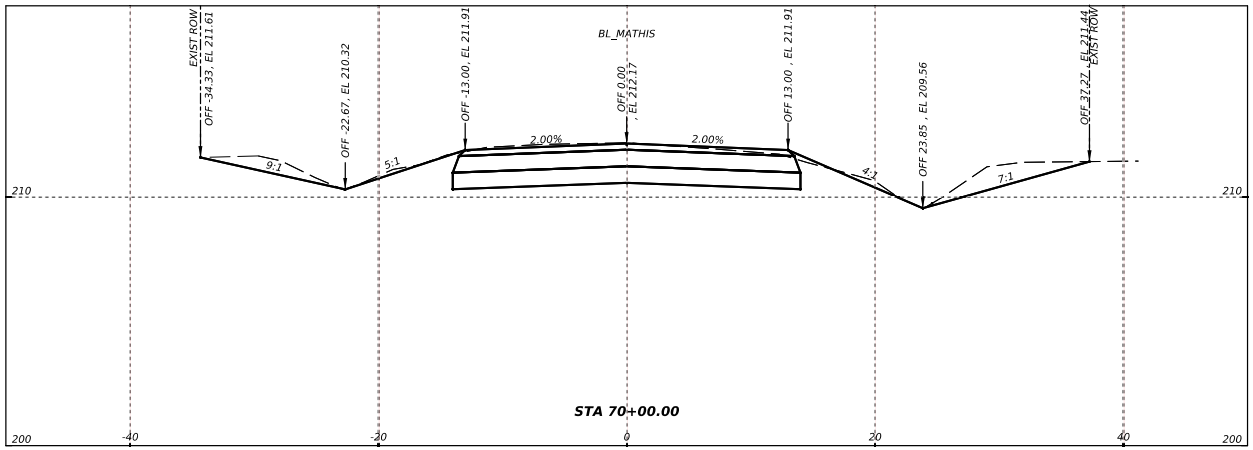

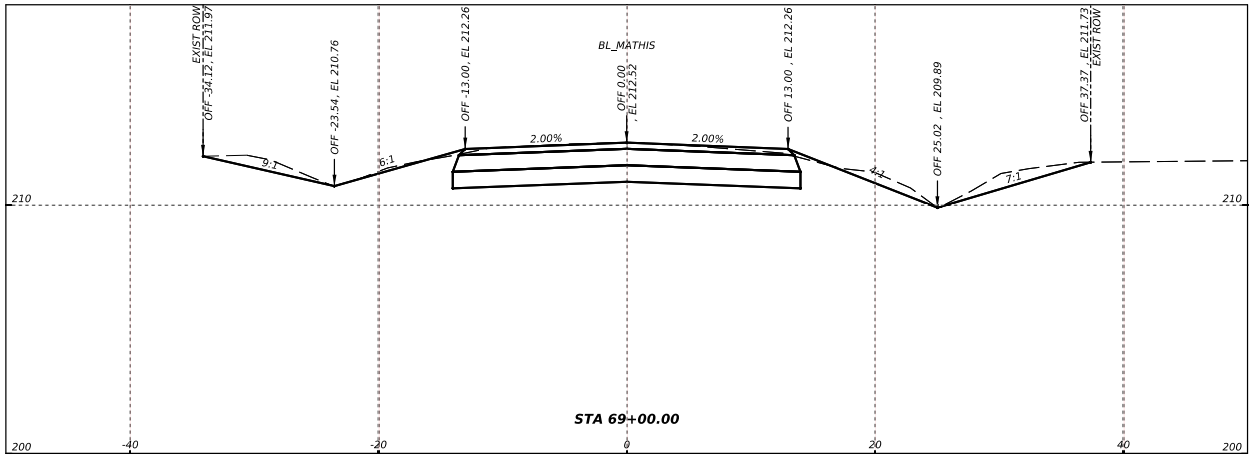

STATE OF TEXAS
ANDREW CRUMP
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LICENSED
PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 27 OF 50

REV. NO.	DATE	DESCRIPTION	BY

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MATHIS RD CROSS SECTIONS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		130

DATE: 6/9/2026 5:16:37 PM
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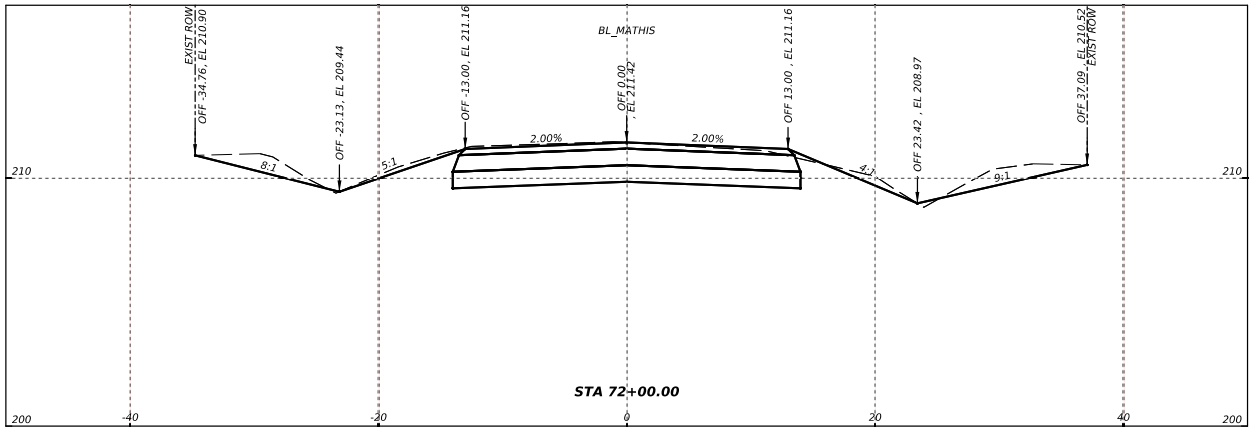

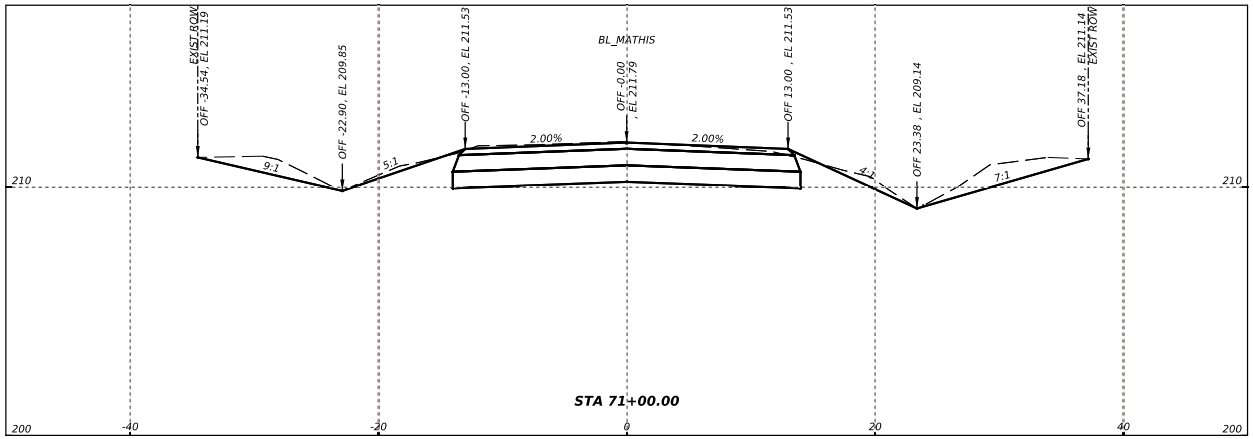

STATE OF TEXAS
ANDREW CRUMP
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LICENSED PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 28 OF 50

REV. NO.	DATE	DESCRIPTION	BY

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MATHIS RD CROSS SECTIONS

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		131

DATE: 6/9/2026 5:16:38 PM
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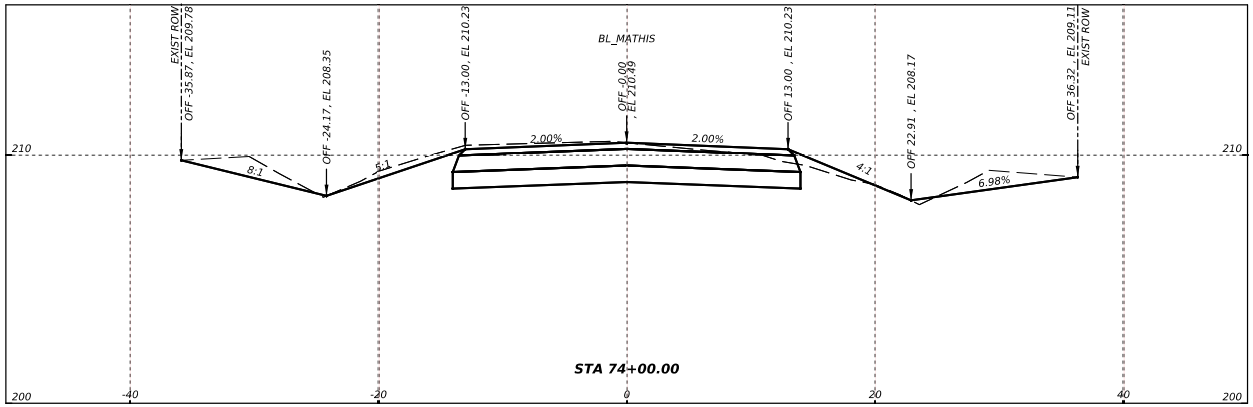

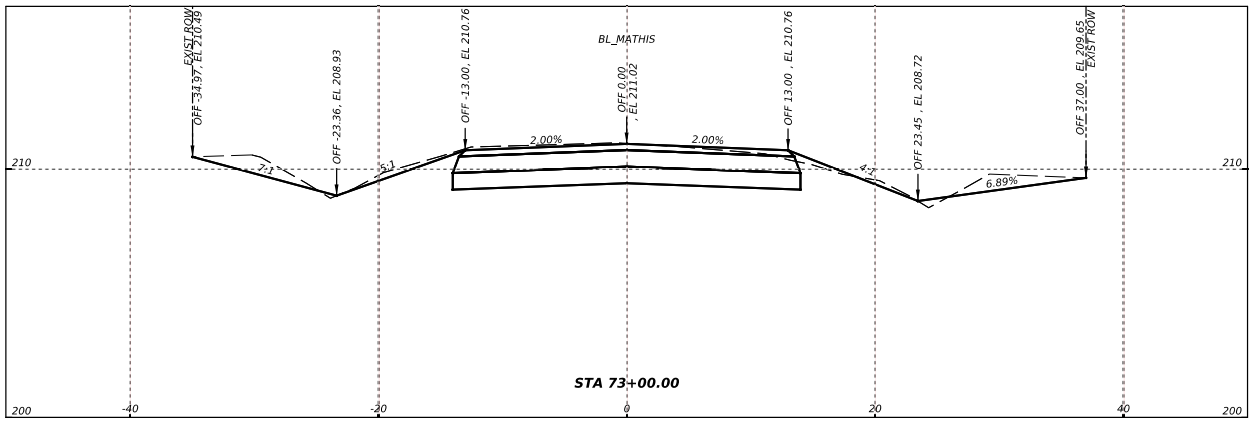

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 29 OF 50

REV. NO.	DATE	DESCRIPTION	BY

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MATHIS RD CROSS SECTIONS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		132

DATE: 6/9/2026 5:16:38 PM
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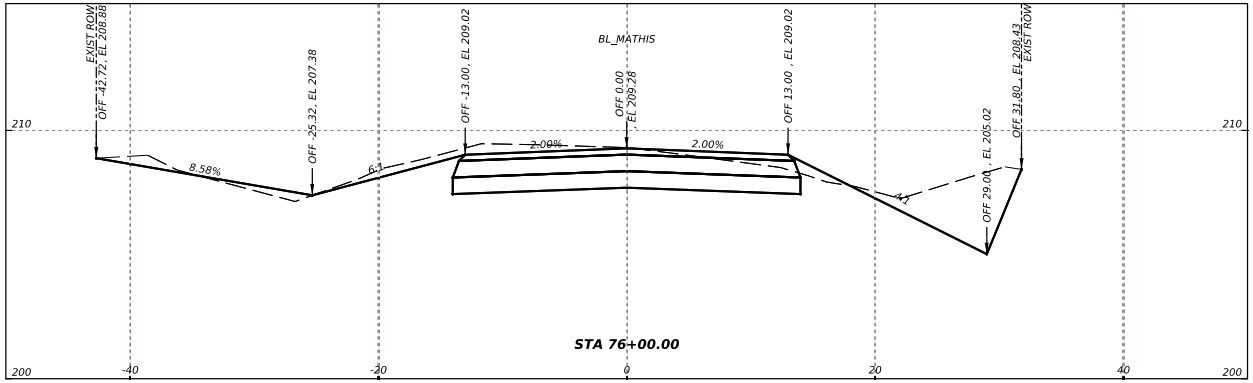

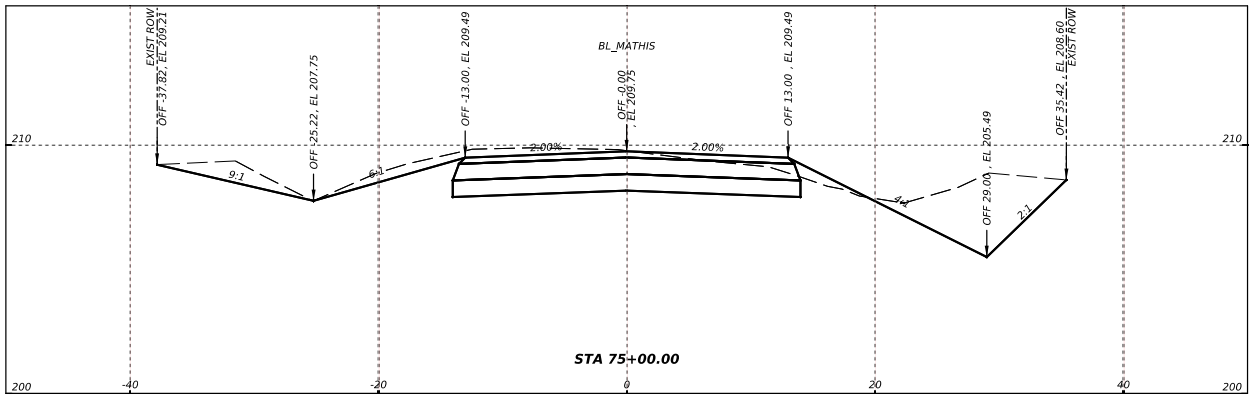

ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 30 OF 50

REV. NO.	DATE	DESCRIPTION	BY

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MATHIS RD
CROSS
SECTIONS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		133

DATE: 6/9/2026 5:16:39 PM
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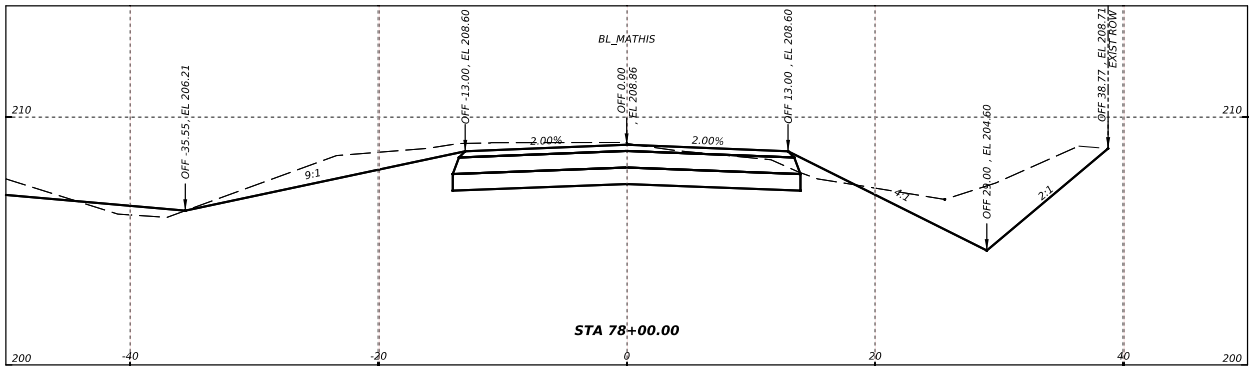

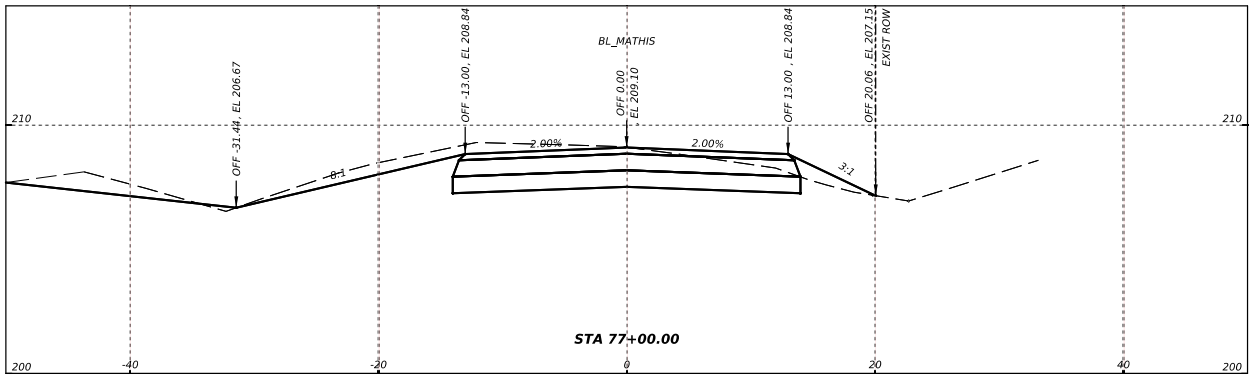

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 31 OF 50

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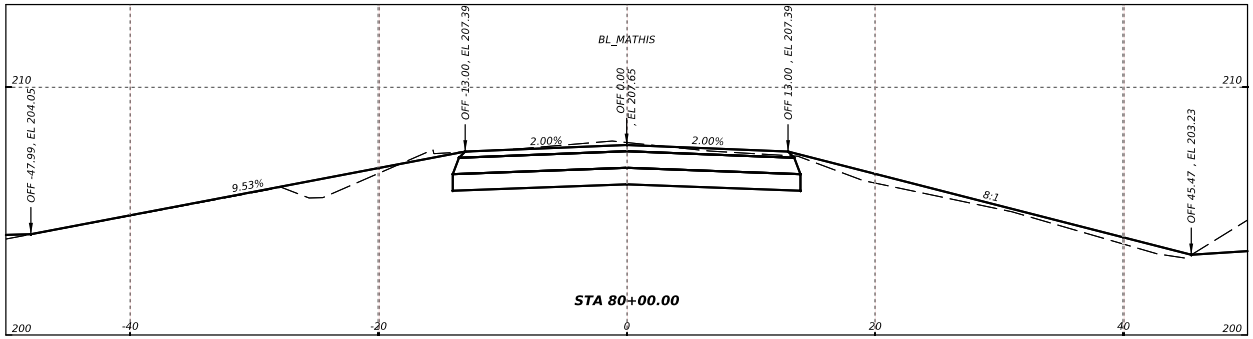
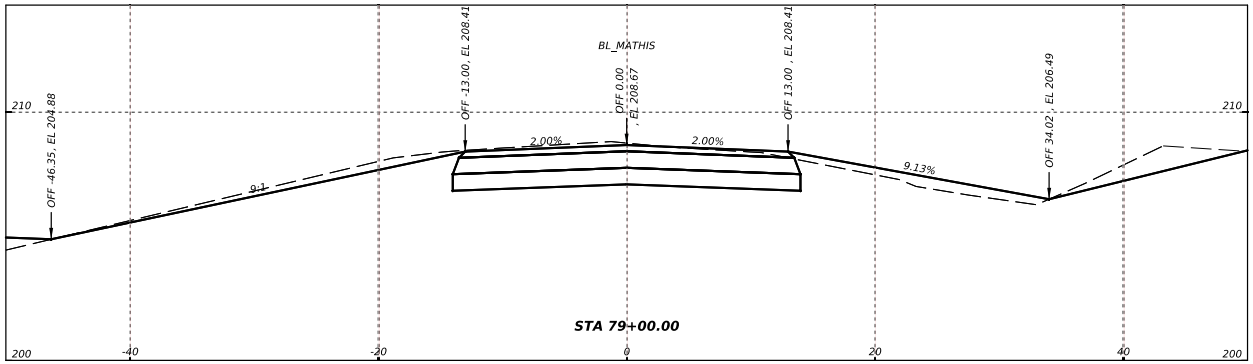
MATHIS RD CROSS SECTIONS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		134





STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 32 OF 50

REV. NO.	DATE	DESCRIPTION	BY

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MATHIS RD
CROSS
SECTIONS

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		135

DATE: 6/9/2026 5:16:41 PM
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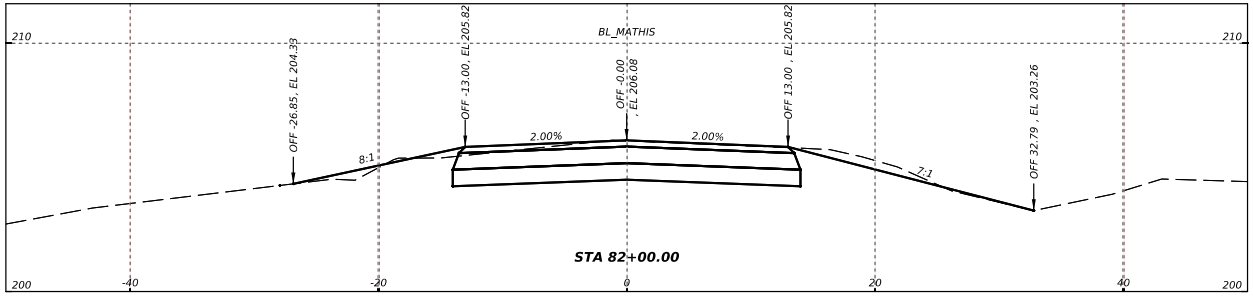

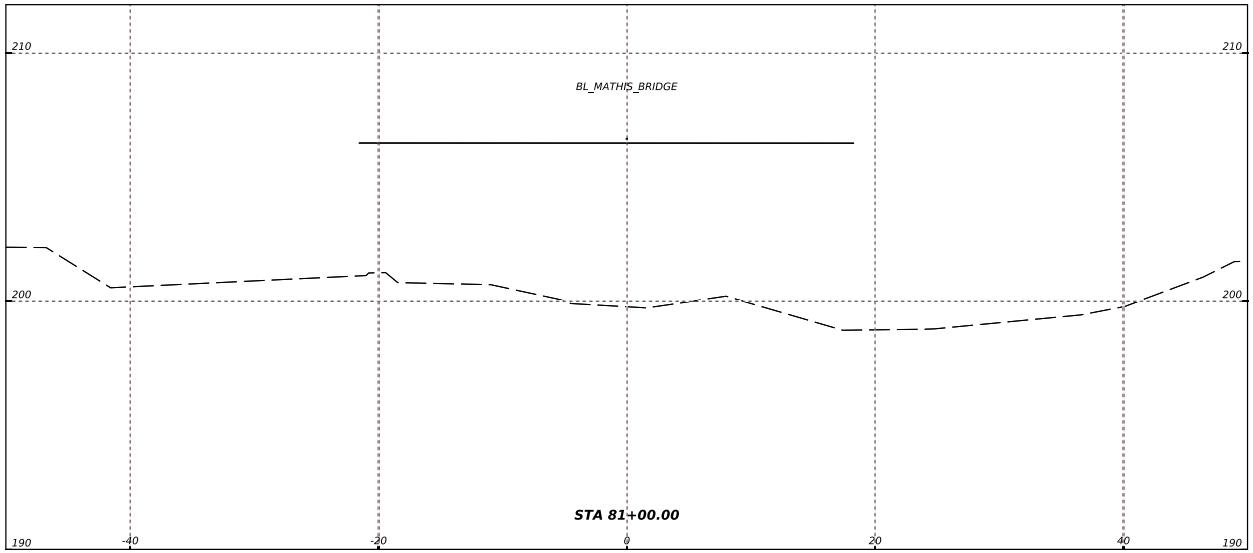

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 33 OF 50

REV. NO.	DATE	DESCRIPTION	BY

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MATHIS RD
CROSS
SECTIONS

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		135A

DATE: 6/9/2026 5:16:42 PM
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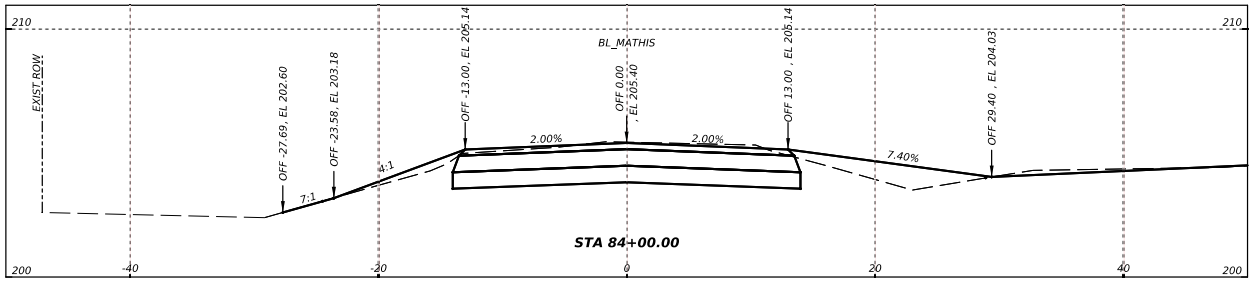

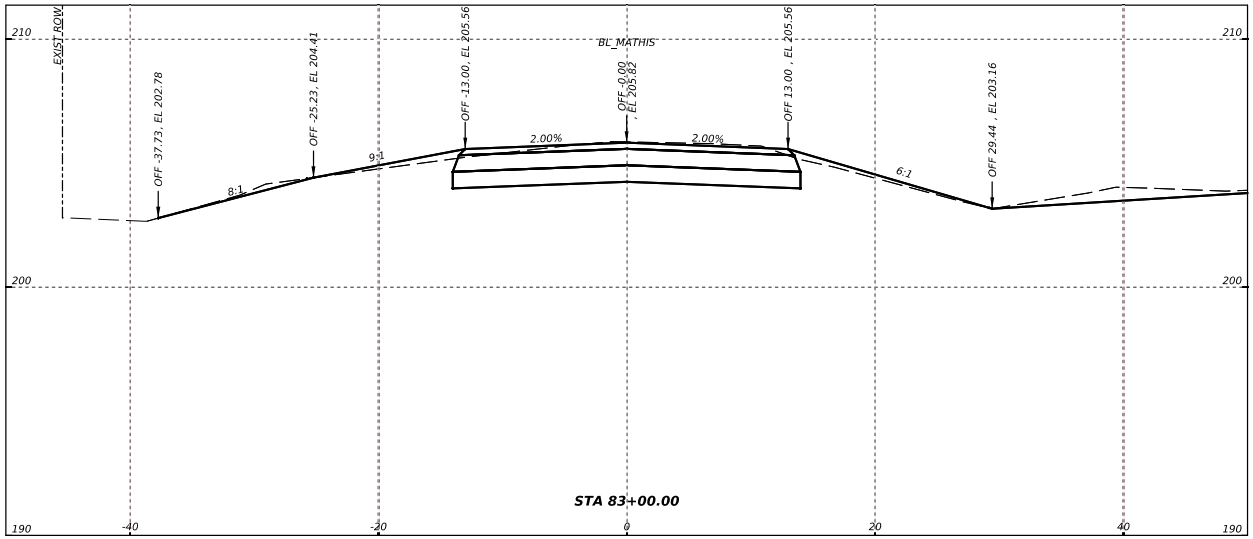

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 34 OF 50

REV. NO.	DATE	DESCRIPTION	BY

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MATHIS RD
CROSS
SECTIONS

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		135B

DATE: 6/9/2026 5:16:42 PM
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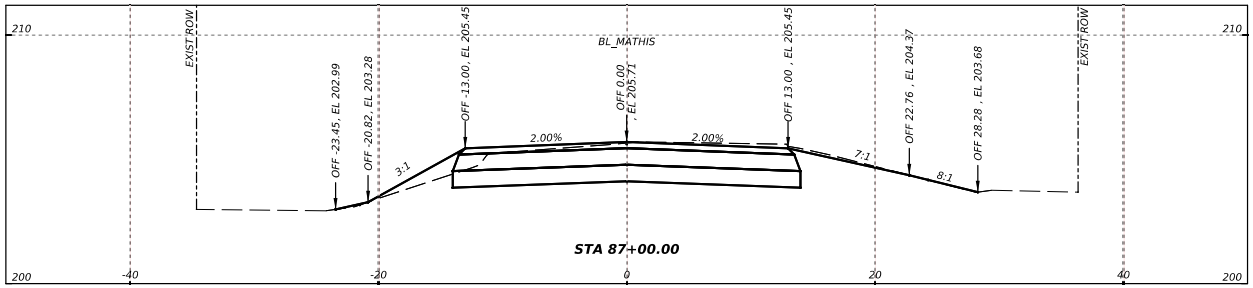

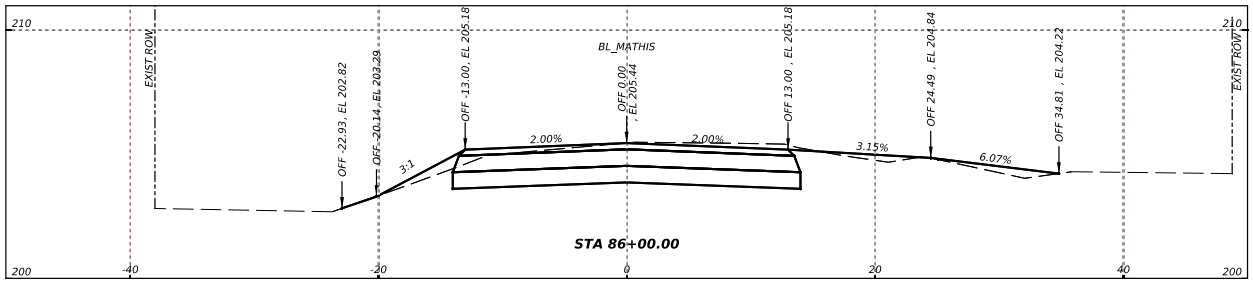

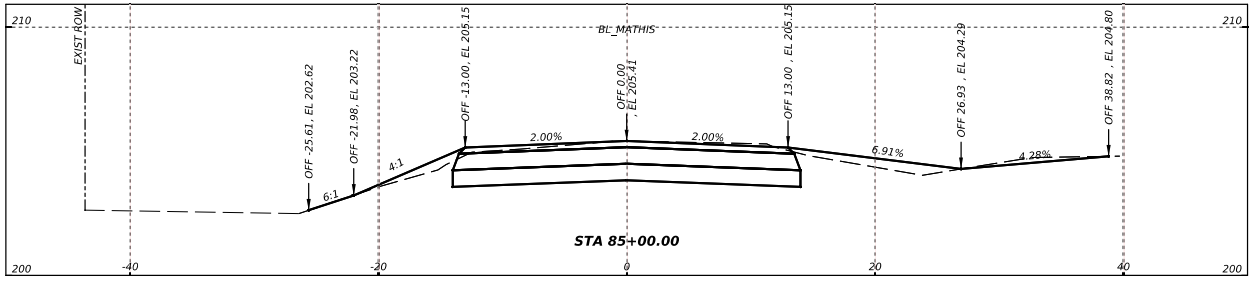

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 35 OF 50

DATE: 6/9/2026 5:16:43 PM
FILE: \\hrgreen.com\hrg\Data\2024\24041880\DesignData\4 - Design\Plan Set\12. Cross Sections\4188 PR XS 01.dgn

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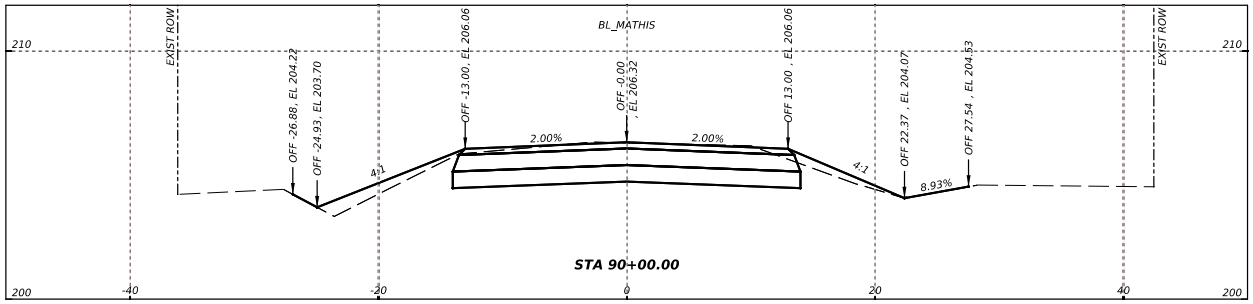
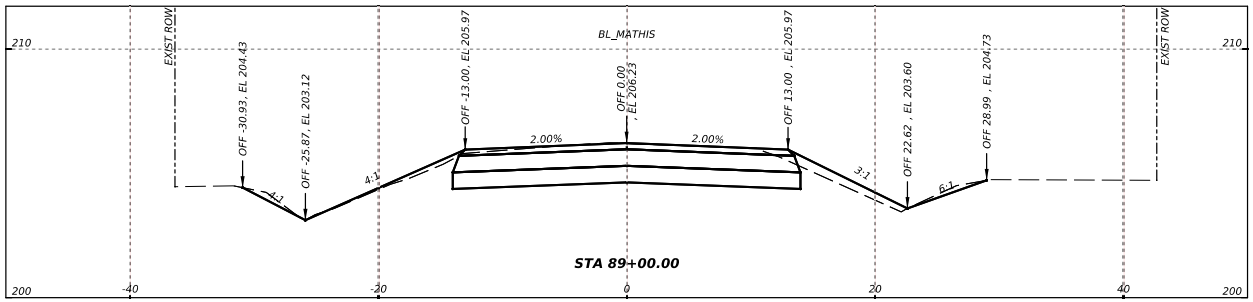
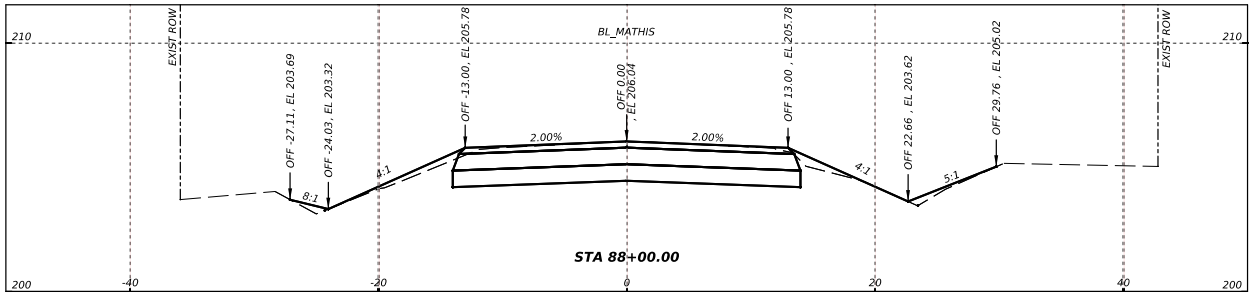
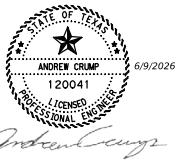
MATHIS RD CROSS SECTIONS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		135C









1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 36 OF 50

REV. NO.	DATE	DESCRIPTION	BY

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Firm No. F-11278

MATHIS RD
CROSS
SECTIONS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		135D

DATE: 6/9/2026 5:16:44 PM
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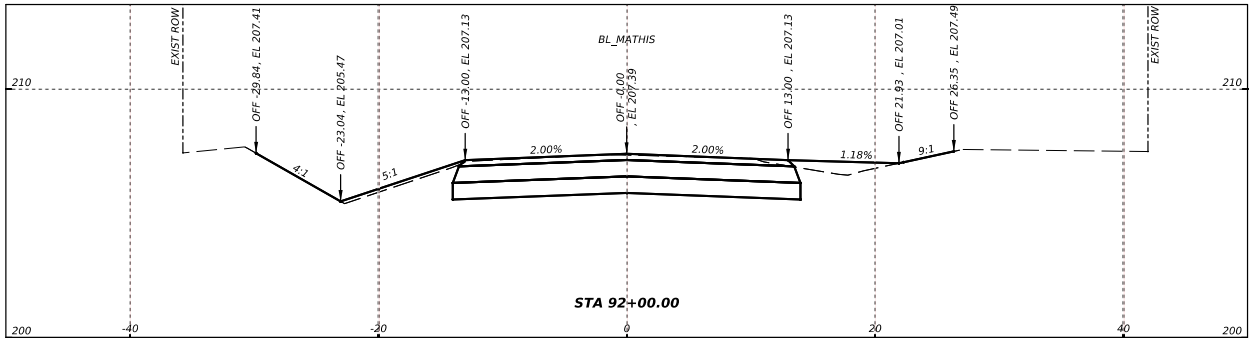

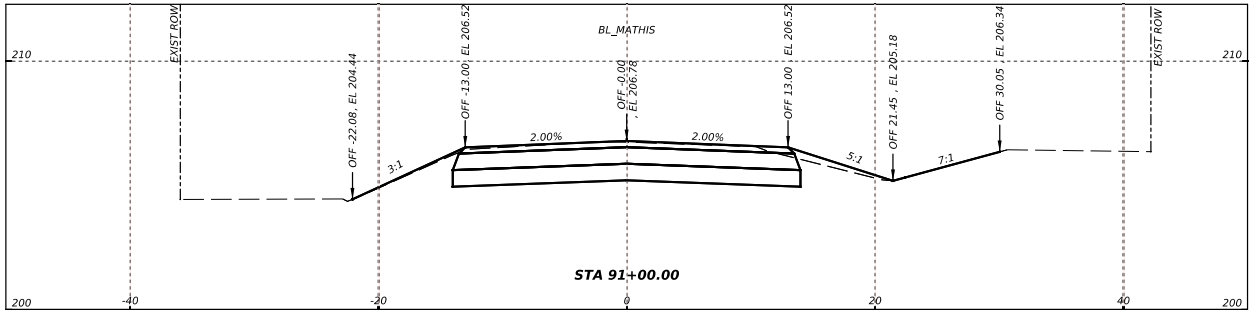

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 37 OF 50

DATE: 6/9/2026 5:16:45 PM
FILE: \\hrgreen.com\hrg\Data\2024\2404188\DesignData\4 - Design\Plan Set\12. Cross Sections\4188 PR XS 01.dgn

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

THE STATE OF TEXAS WALLER COUNTY

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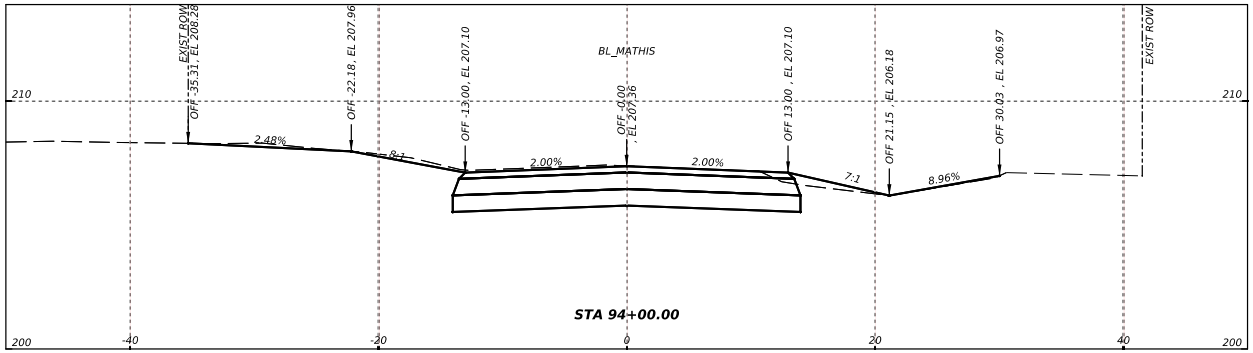
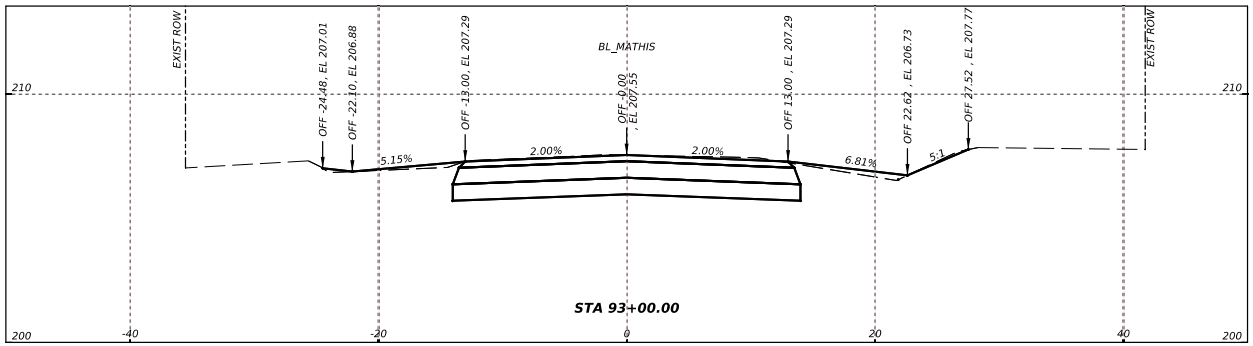
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS RD CROSS SECTIONS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		135E





STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED
PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 38 OF 50

REV. NO.	DATE	DESCRIPTION	BY

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MATHIS RD
CROSS
SECTIONS

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		135F

DATE: 6/9/2026 5:16:46 PM
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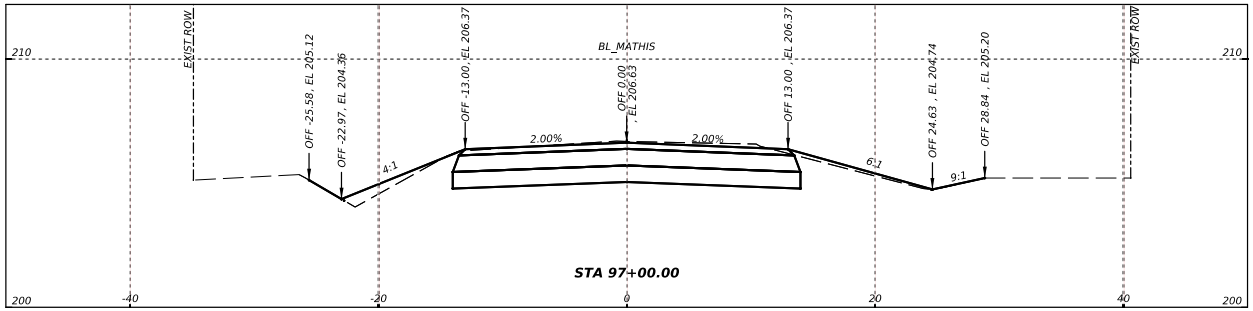

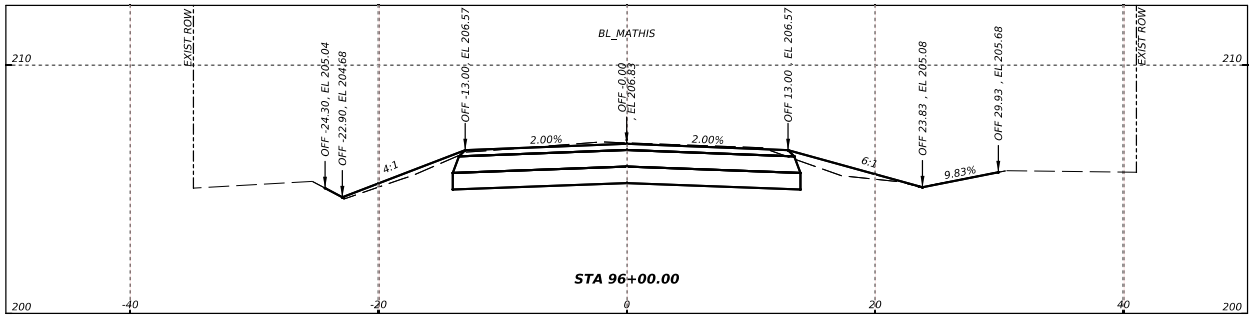

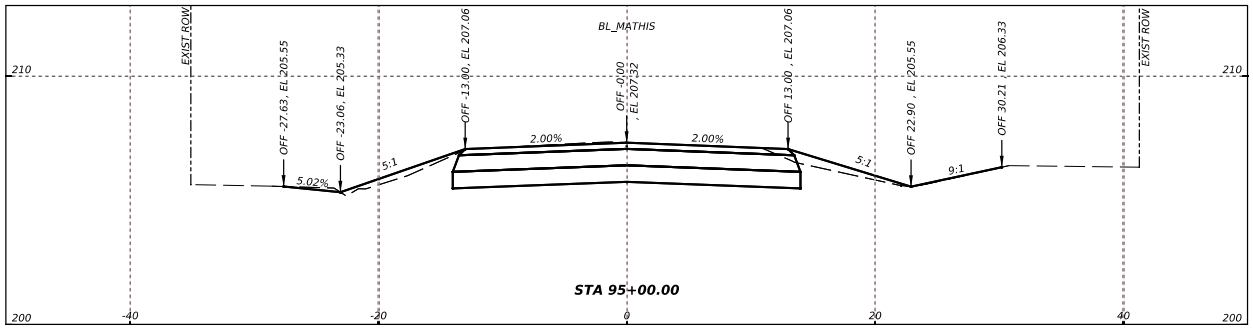

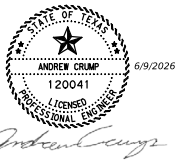

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 39 OF 50

DATE: 6/9/2026 5:16:47 PM
FILE: \\hrgreen.com\hrg\Data\2024\24041881DesignData\4 - Design\Plan Set\12. Cross Sections\4188 PR XS 01.dgn

REV. NO.	DATE	DESCRIPTION	BY

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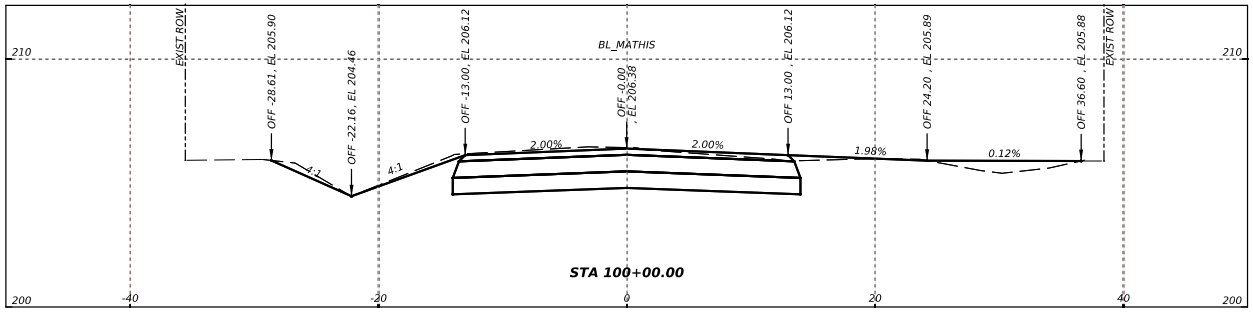
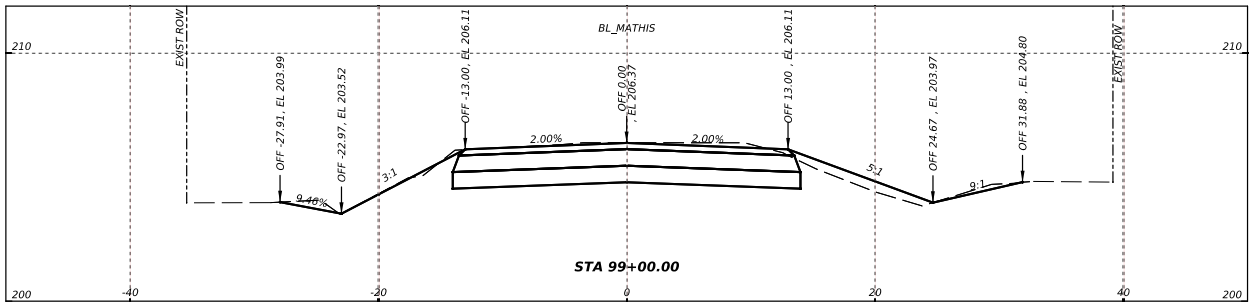
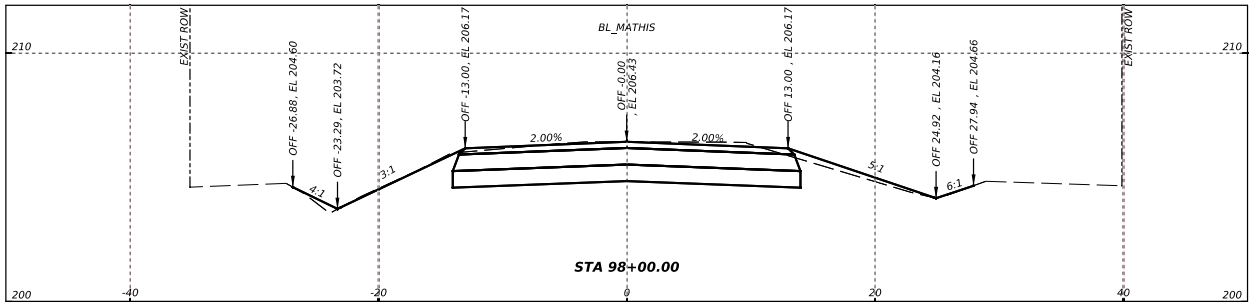
MATHIS RD
CROSS
SECTIONS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		135G







STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 40 OF 50

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FILE: \\hrgreen.com\hrg\Data\2024\2404188\DesignData\4 - Design\Plan Set\12. Cross Sections\4188 PR XS 01.dgn

REV. NO.	DATE	DESCRIPTION	BY

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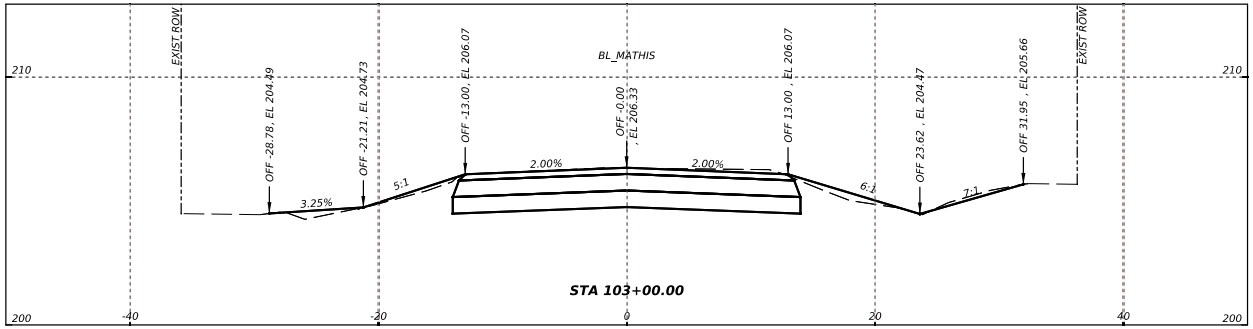
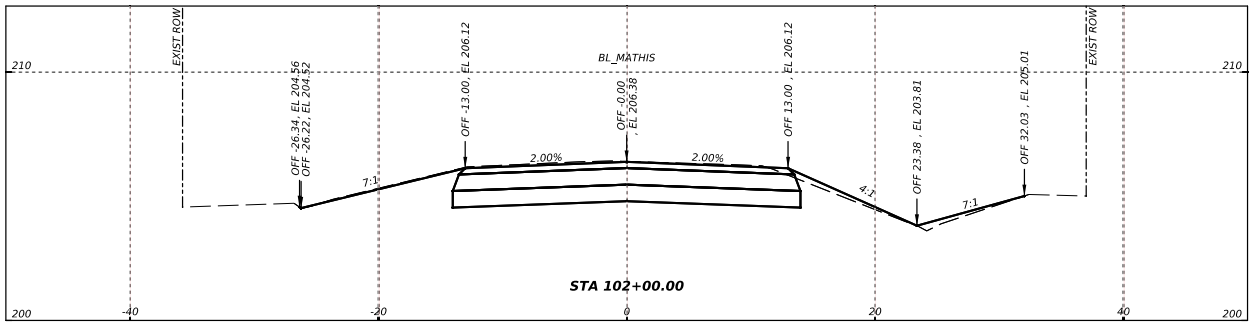
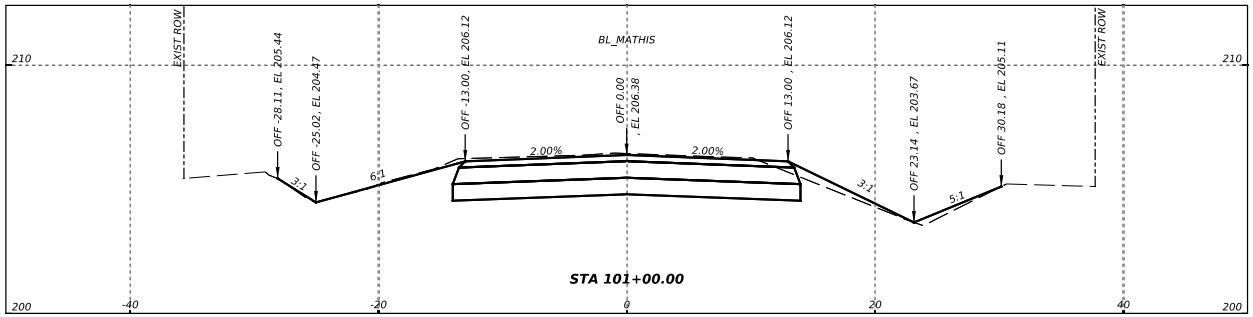
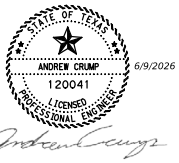
MATHIS RD CROSS SECTIONS

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		135H









1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 41 OF 50

DATE: 6/9/2026 5:16:49 PM
FILE: \\hrgreen.com\hrg\Data\2024\2404188\DesignData\4 - DesignPlan Set\12. Cross Sections\4188 PR XS 01.dgn

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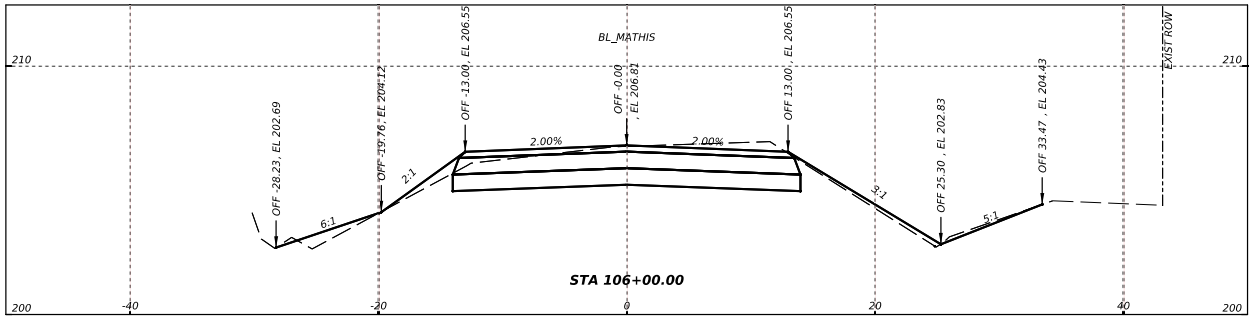
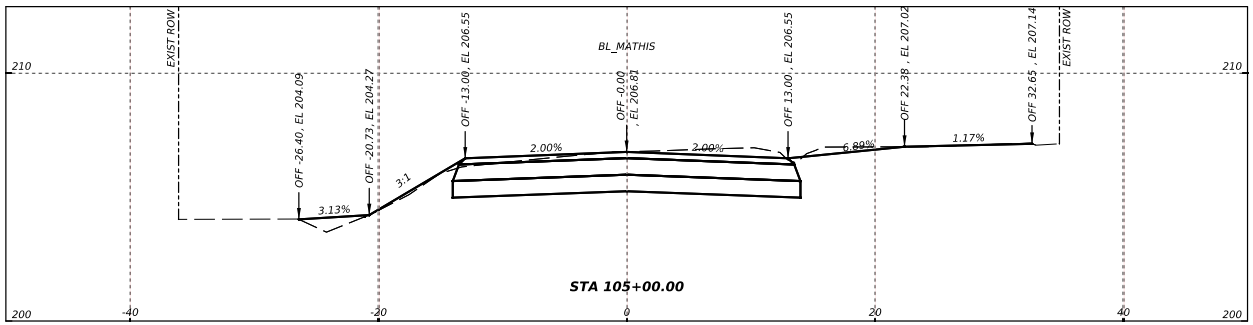
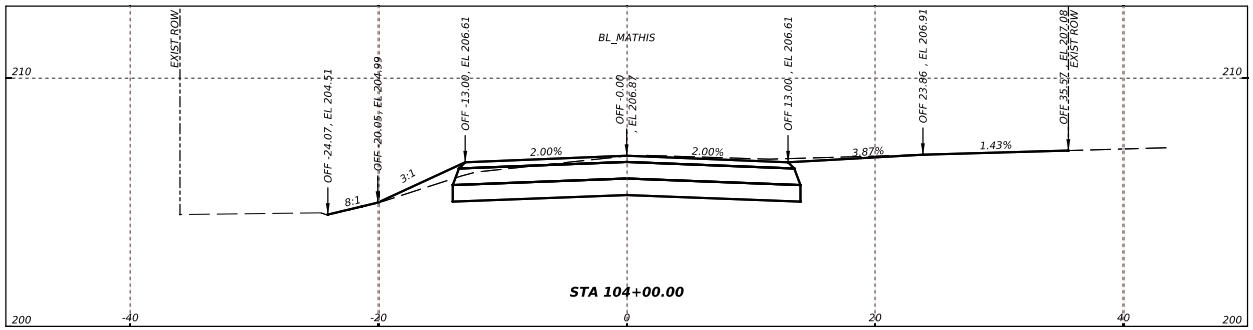
MATHIS RD CROSS SECTIONS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		135I







1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 42 OF 50

DATE: 6/9/2026 5:16:50 PM
FILE: \\hrgreen.com\hrg\Data\2024\2404188\DesignData\4 - Design\Plan Set\12. Cross Sections\4188 PR XS 01.dgn

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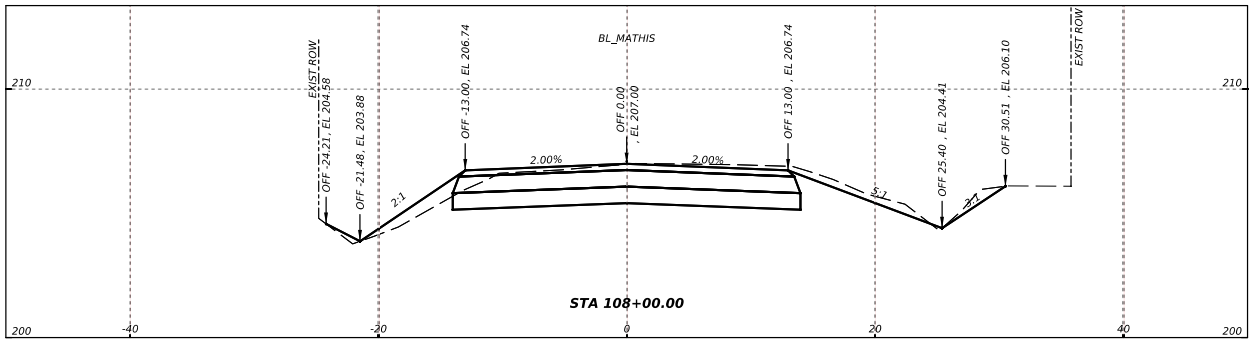
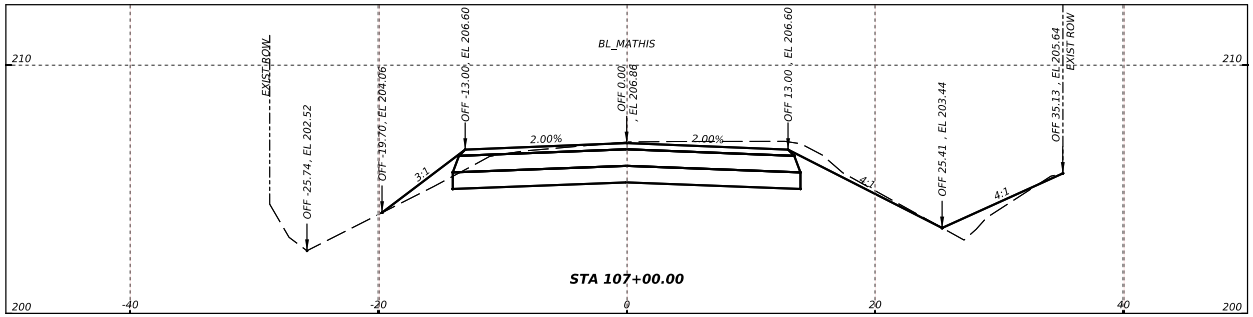
MATHIS RD
CROSS
SECTIONS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		135K





STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 43 OF 50

DATE: 6/9/2026 5:16:51 PM
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REV. NO.	DATE	DESCRIPTION	BY

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WALLER COUNTY

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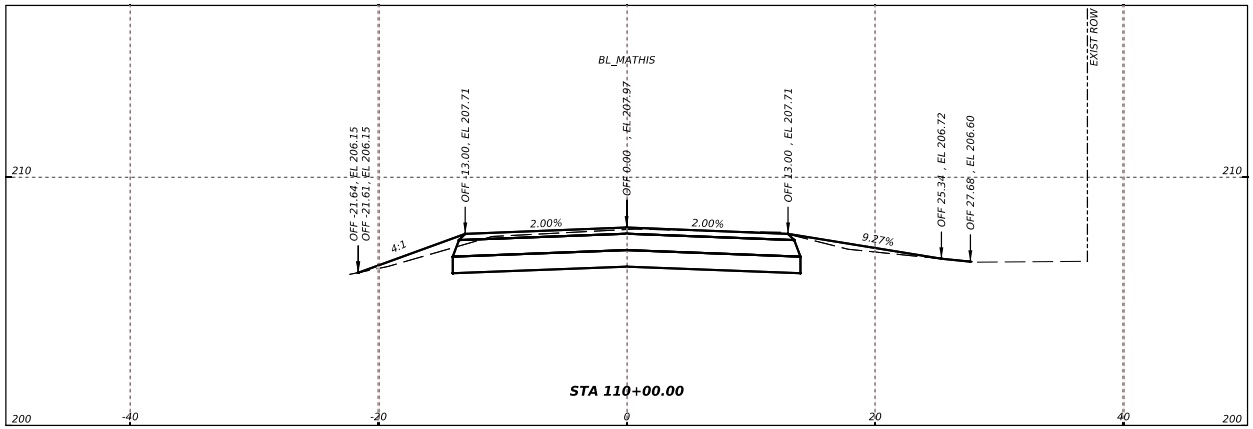
MATHIS RD
CROSS
SECTIONS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		135L



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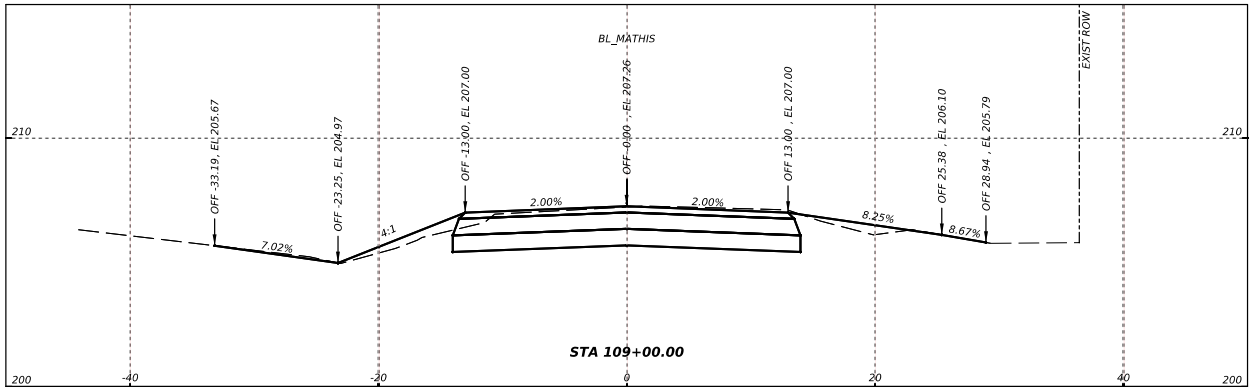

STA 109+00.00

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 44 OF 50

DATE: 6/9/2026 5:16:52 PM
FILE: \\hrgreen.com\hrg\Data\2024\2404188\Design\Data\4 - Design\Plan Set\12. Cross Sections\4188 PR XS 01.dgn

REV. NO.	DATE	DESCRIPTION	BY

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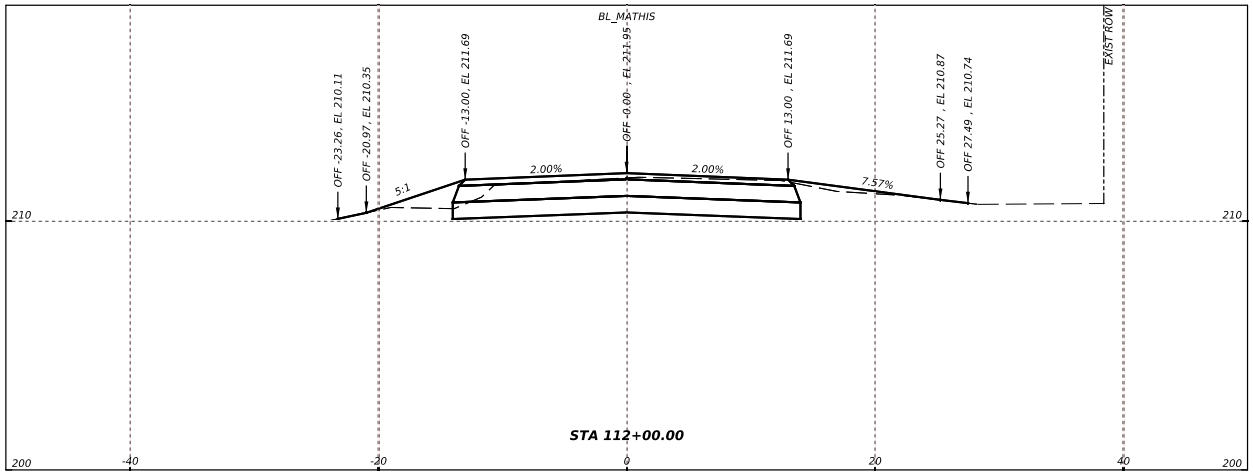
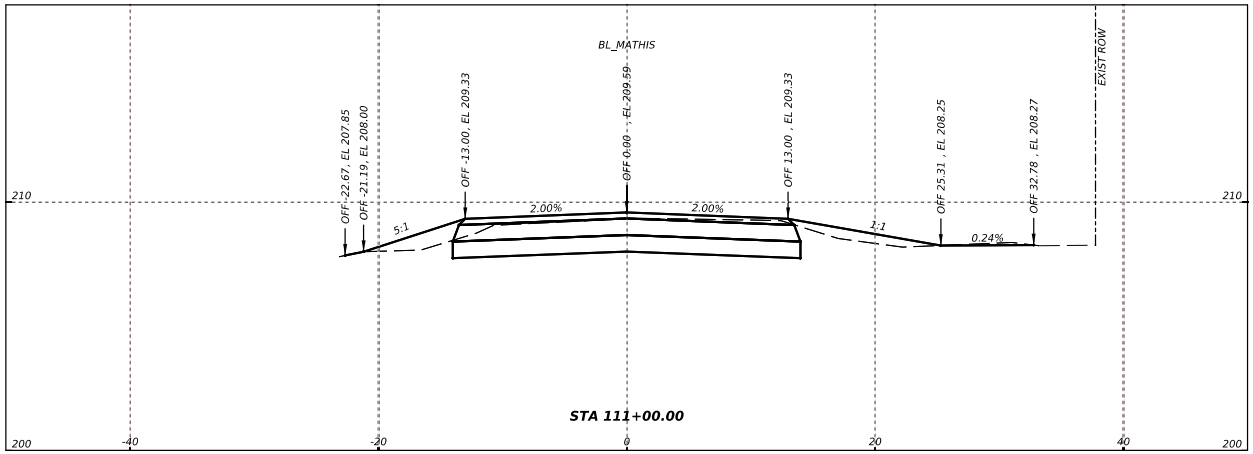
MATHIS RD
CROSS
SECTIONS

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		135M





STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 45 OF 50

DATE: 6/9/2026 5:16:52 PM
FILE: \\hrgreen.com\hrg\Data\2024\2404188\DesignData\4 - Design\Plan Set\12. Cross Sections\4188 PR XS 01.dgn

REV. NO.	DATE	DESCRIPTION	BY

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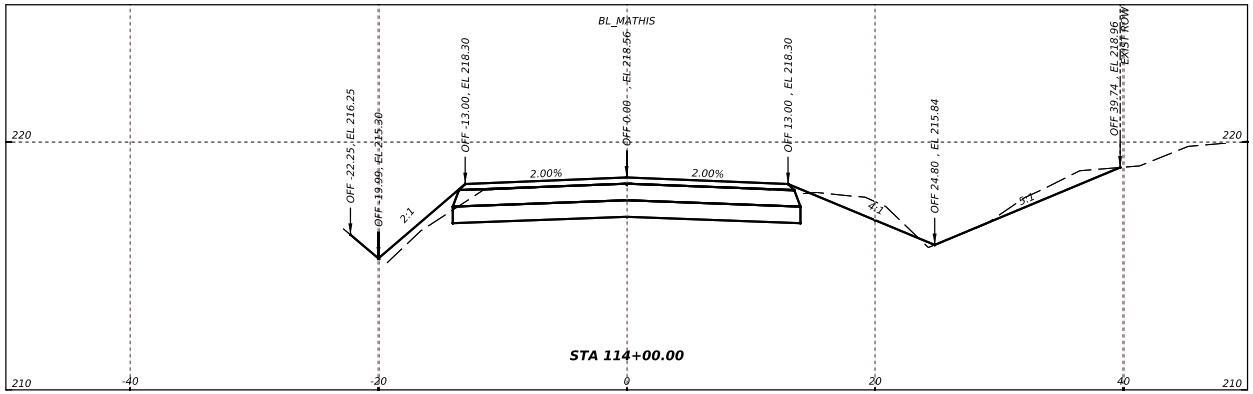
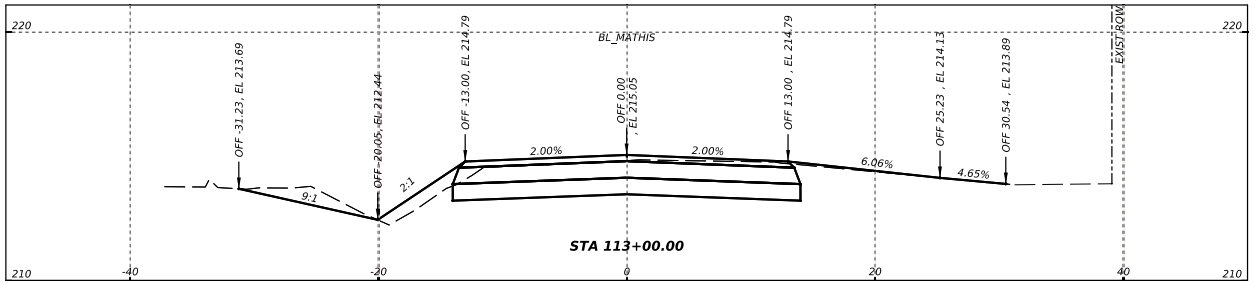
MATHIS RD CROSS SECTIONS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		135N





STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 46 OF 50

REV. NO.	DATE	DESCRIPTION	BY

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MATHIS RD CROSS SECTIONS

DN:	CONT.	SECT.	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST.	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		135O

DATE: 6/9/2026 5:16:53 PM
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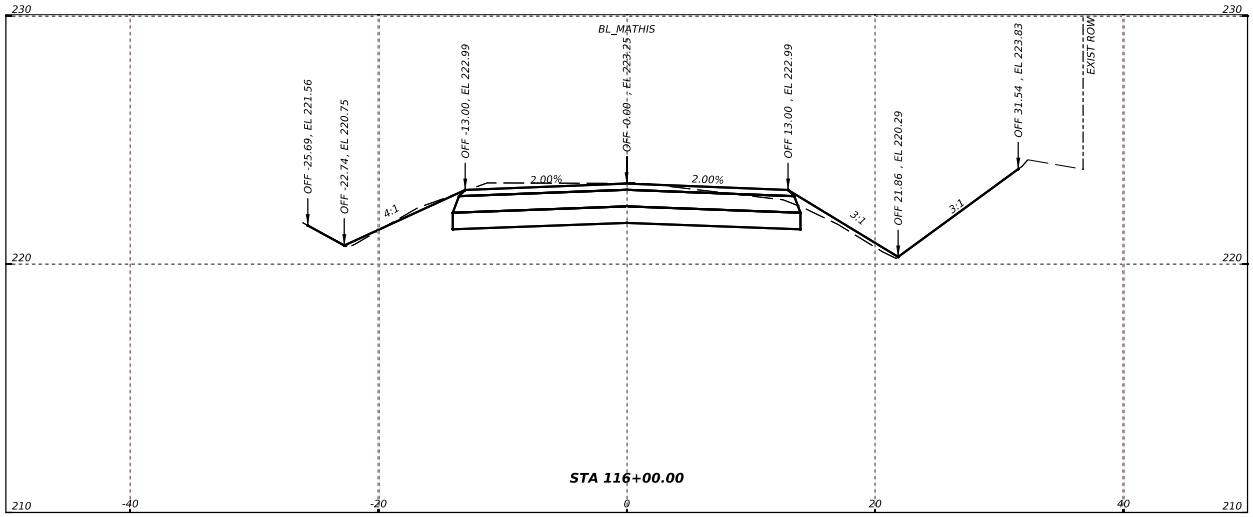

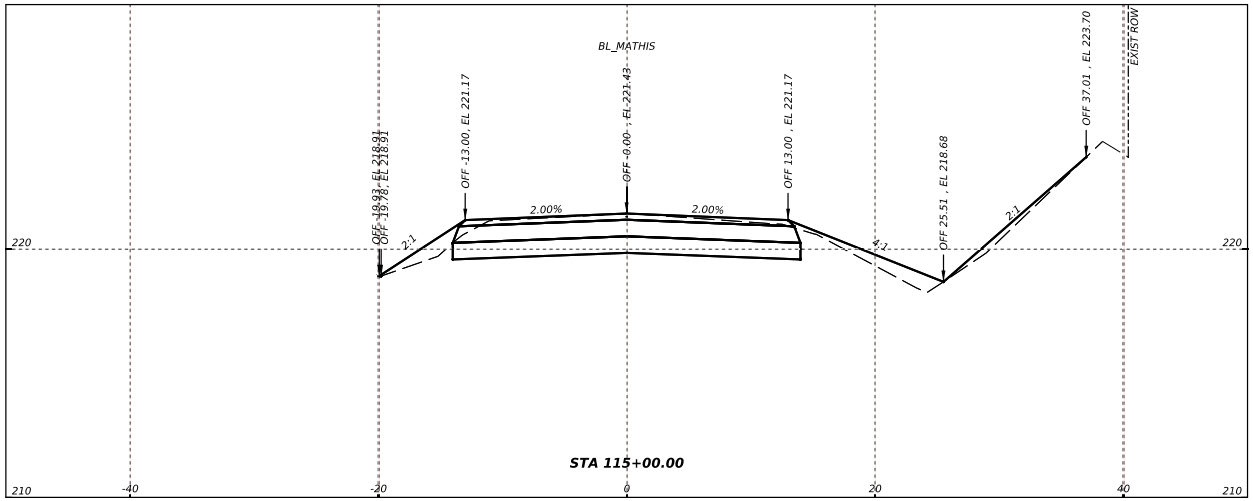

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 47 OF 50

REV. NO.	DATE	DESCRIPTION	BY

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MATHIS RD CROSS SECTIONS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		135P

DATE: 6/9/2026 5:16:54 PM
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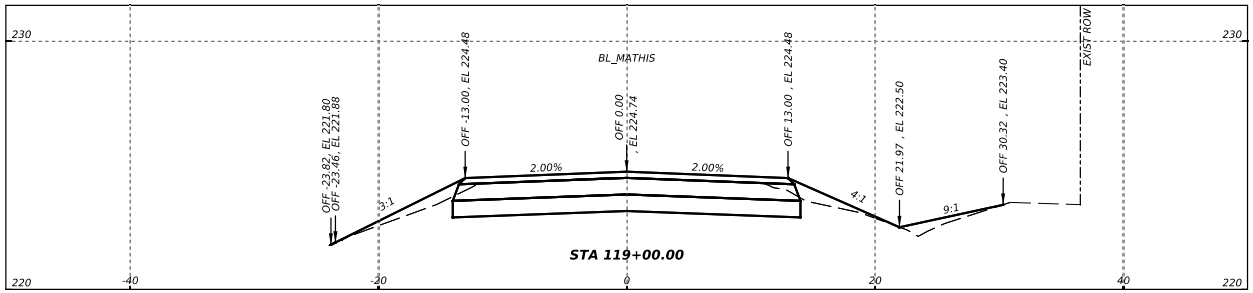

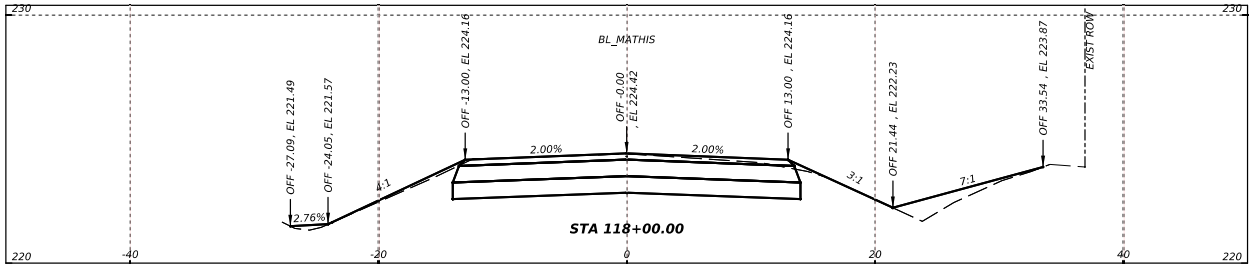

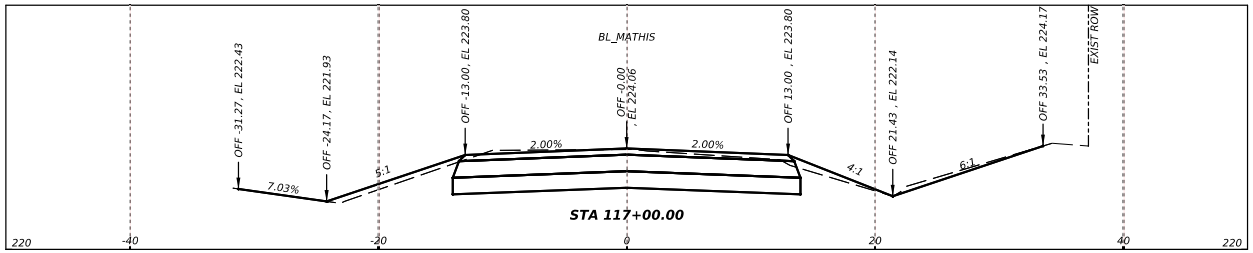

ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 48 OF 50

REV. NO.	DATE	DESCRIPTION	BY

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MATHIS RD CROSS SECTIONS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		135Q

DATE: 6/9/2026 5:16:55 PM
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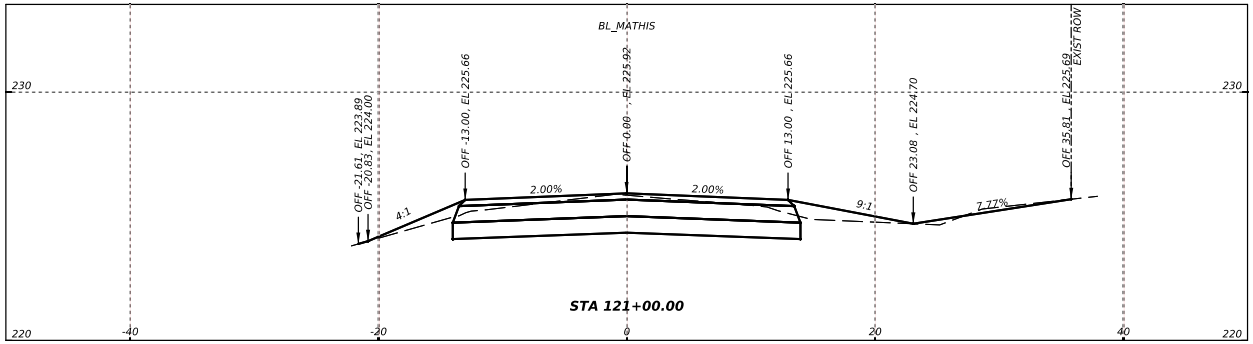

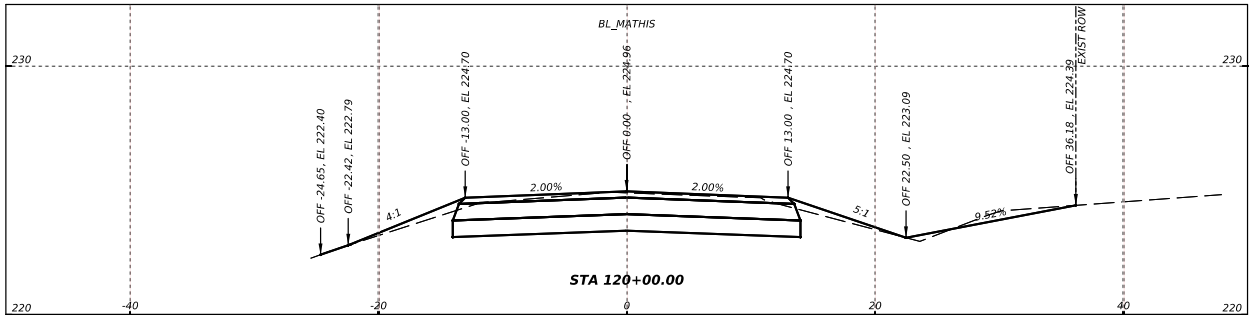

ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 49 OF 50

REV. NO.	DATE	DESCRIPTION	BY

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PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS RD CROSS SECTIONS

DN:	CONT.	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		135R

DATE: 6/9/2026 5:16:56 PM
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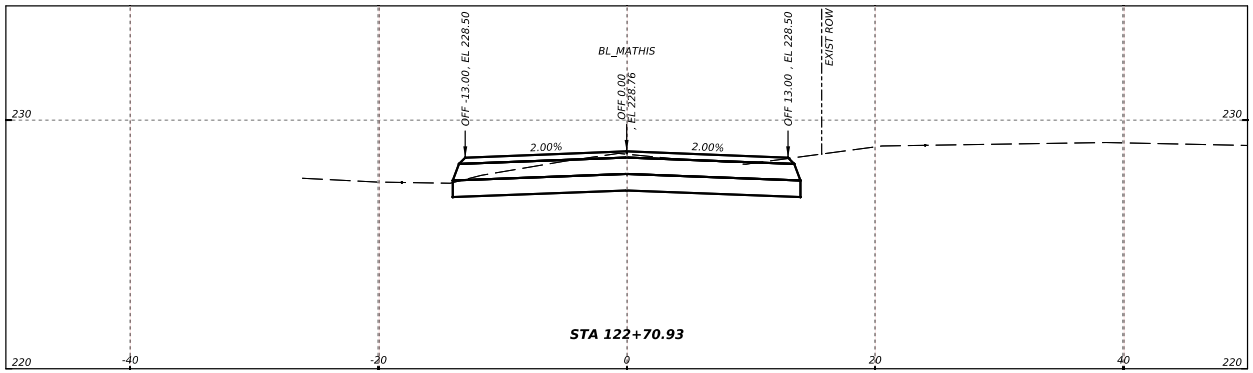

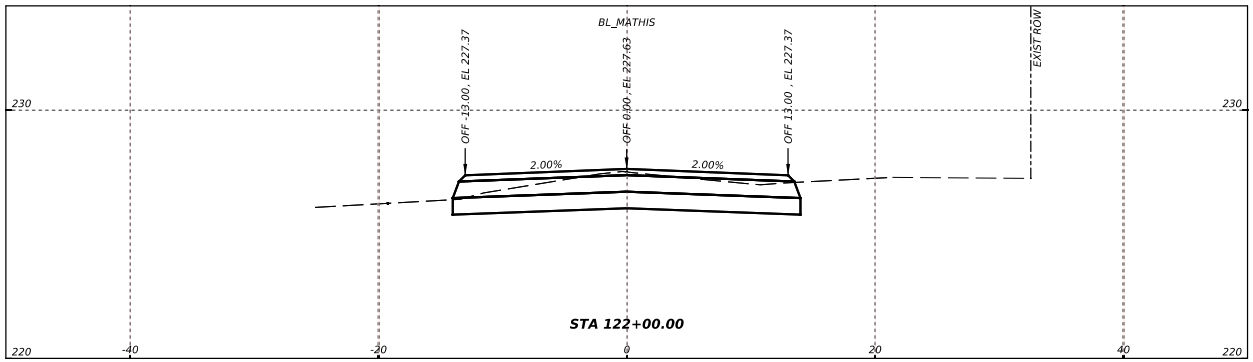

STATE OF TEXAS
ANDREW CRUMP
120041
LICENSED PROFESSIONAL ENGINEER
6/9/2026

1" = 10' HORIZONTAL
1" = 2' VERTICAL

SHEET 50 OF 50

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

PREPARED BY:
HRGreen
11011 RICHMOND AVE, SUITE 200
HOUSTON, TX 77042
(713) 965-9996
(713) 965-0044 FAX
HRGreen.com
Firm No. F-11278

MATHIS RD CROSS SECTIONS

DN:	CONT	SECT	JOB	HIGHWAY
CK DN:			23206	MATHIS RD
DW:	DIST	COUNTY		SHEET NO.
CK DW:		WALLER COUNTY		135S

DATE: 6/9/2026 5:16:57 PM
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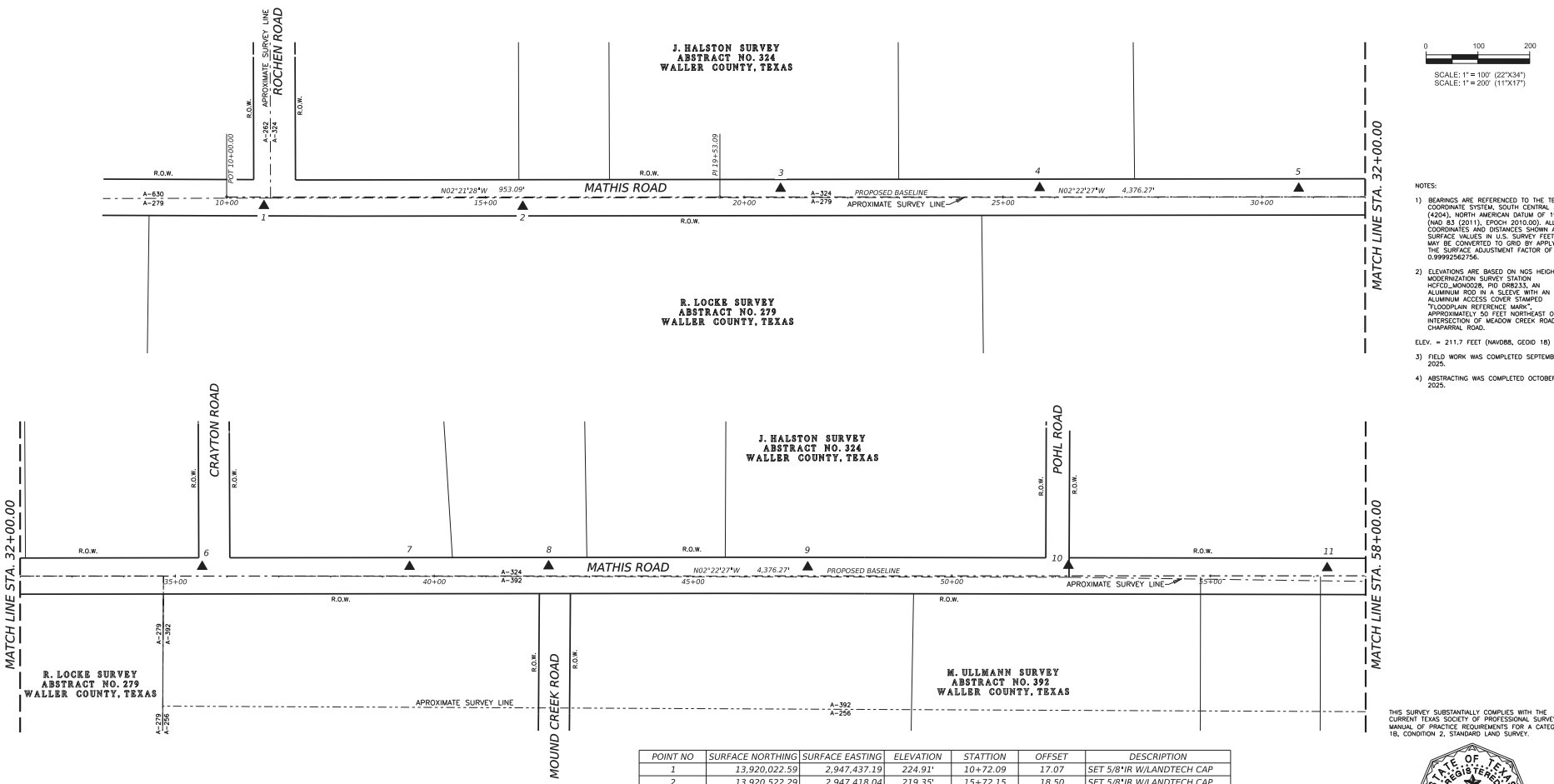

NOTES:

1) BEARINGS ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATUM OF 1983 (NAD 83 (2011), EPOCH 2010.00). ALL COORDINATES AND DISTANCES SHOWN ARE SURFACE VALUES IN U.S. SURVEY FEET AND MAY BE CONVERTED TO GRID BY APPLYING THE SURFACE ADJUSTMENT FACTOR OF 0.99992562756.

2) ELEVATIONS ARE BASED ON NGS HEIGHT MODERNIZATION SURVEY STATION HCFCD_MONO028, PID DR8233, AN ALUMINUM ROD IN A SLEEVE WITH AN ALUMINUM ACCESS COVER STAMPED "FLOODPLAIN REFERENCE MARK", APPROXIMATELY 50 FEET NORTHEAST OF THE INTERSECTION OF MEADOW CREEK ROAD AND CHAPARRAL ROAD.

ELEV. = 211.7 FEET (NAVD88, GEOID 18)

3) FIELD WORK WAS COMPLETED SEPTEMBER, 2025.

4) ABSTRACTING WAS COMPLETED OCTOBER, 2025.

POINT NO	SURFACE NORTHING	SURFACE EASTING	ELEVATION	STATTION	OFFSET	DESCRIPTION
1	13,920,022.59	2,947,437.19	224.91'	10+72.09	17.07	SET 5/8"IR W/LANDTECH CAP
2	13,920,522.29	2,947,418.04	219.35'	15+72.15	18.50	SET 5/8"IR W/LANDTECH CAP
3	13,921,018.66	2,947,362.82	212.63'	20+70.39	-16.22	SET 5/8"IR W/LANDTECH CAP
4	13,921,518.81	2,947,340.77	210.54'	25+71.02	-17.54	SET 5/8"IR W/LANDTECH CAP
5	13,922,019.06	2,947,321.30	211.67'	30+71.65	-16.26	SET 5/8"IR W/LANDTECH CAP
6	13,922,498.68	2,947,299.32	216.83'	35+51.76	-18.36	SET 5/8"IR W/LANDTECH CAP
7	13,922,898.97	2,947,282.95	220.76'	39+52.39	-18.14	SET 5/8"IR W/LANDTECH CAP
8	13,923,167.36	2,947,270.91	222.44'	42+21.05	-19.05	SET 5/8"IR W/LANDTECH CAP
9	13,923,667.69	2,947,252.23	220.47'	47+21.72	-16.98	SET 5/8"IR W/LANDTECH CAP
10	13,924,170.87	2,947,228.66	215.57'	52+25.45	-19.69	SET 5/8"IR W/LANDTECH CAP
11	13,924,670.70	2,947,212.47	214.04'	57+25.51	-15.16	SET 5/8"IR W/LANDTECH CAP

(-) DENOTES OFFSET LEFT

THIS SURVEY SUBSTANTIALLY COMPLIES WITH THE CURRENT TEXAS SOCIETY OF PROFESSIONAL SURVEYOR'S MANUAL OF PRACTICE REQUIREMENTS FOR A CATEGORY 1B, CONDITION 2, STANDARD LAND SURVEY.

STATE OF TEXAS
REGISTERED
MICHAEL R. G. JOINES
7064
PROFESSIONAL
LAND SURVEYOR

05-20-2026
DATE

MICHAEL R.G. JOINES
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 7064

NO.	REVISIONS	DATE	NAME
1			
2			
3			
4			
5			

WALLER COUNTY
ENGINEERING DEPARTMENT

LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068 F: 713-861-4131
TBPELS Registration No. 10019100

PROJECT TITLE:	MATHIS ROAD		
	100' SOUTH OF ROCHEN ROAD TO BETKA ROAD		CIVIL STANDARD
SHEET DESCRIPTION:	SURVEY CONTROL INDEX		
DRAWN BY: VG	SHEET 3 OF 20		DATE: 05/20/2026
CK'D BY: MJ	SCALE: AS SHOWN		SHEET NO: 136

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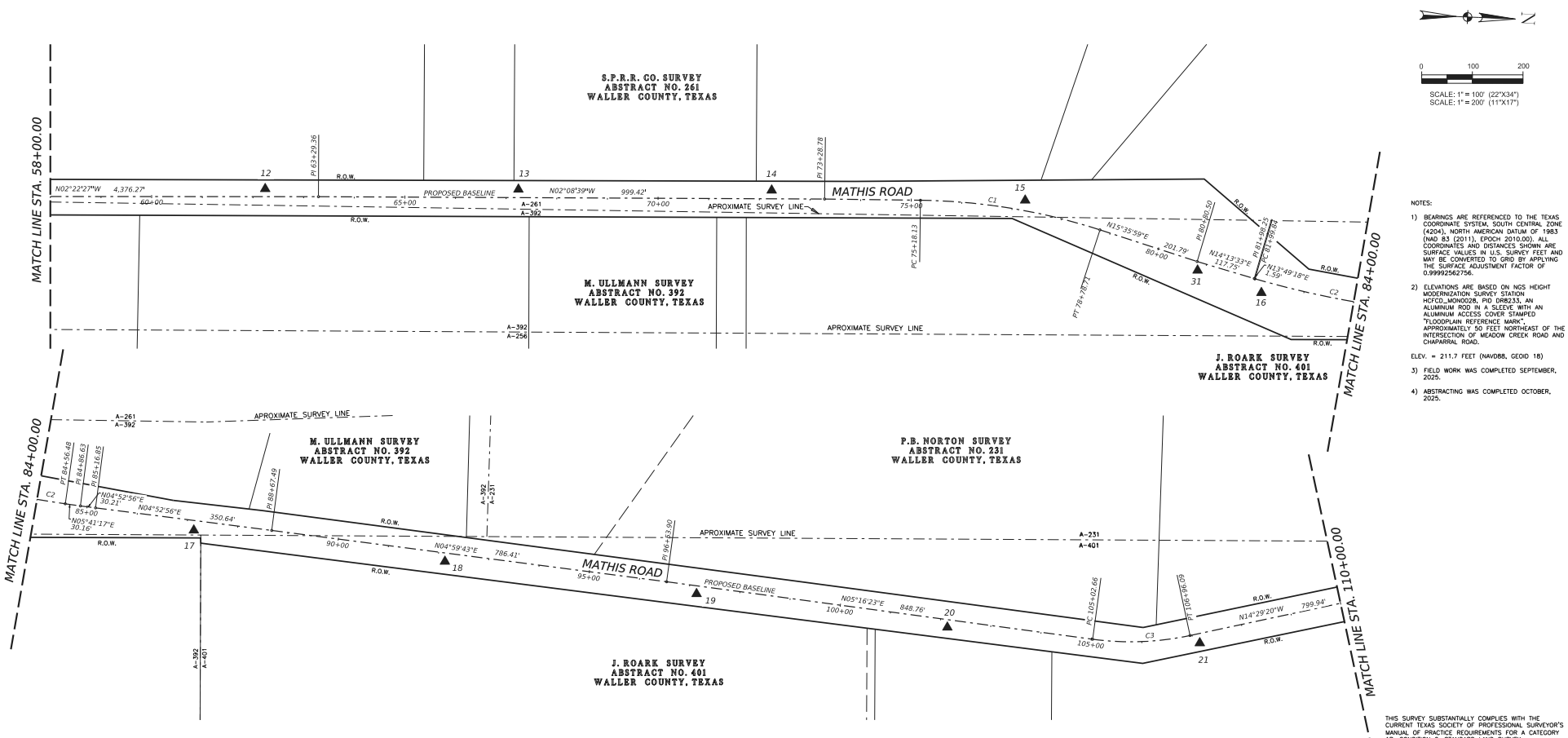

SCALE: 1" = 100' (22"X34")
SCALE: 1" = 200' (11"X17")

NOTES:

1) BEARINGS ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATUM OF 1983 (NAD 83 (2011), EPOCH 2010.00). ALL COORDINATES AND DISTANCES SHOWN ARE SURFACE VALUES IN U.S. SURVEY FEET AND MAY BE CONVERTED TO GRID BY APPLYING THE SURFACE ADJUSTMENT FACTOR OF 0.99992562756.

2) ELEVATIONS ARE BASED ON NGS HEIGHT MODERNIZATION SURVEY STATION HCFCD_MON0028, PID DR8233, AN ALUMINUM ROD IN A SLEEVE WITH AN ALUMINUM ACCESS COVER STAMPED "FLOODPLAIN REFERENCE MARK", APPROXIMATELY 50 FEET NORTHEAST OF THE INTERSECTION OF MEADOW CREEK ROAD AND CHAPARRAL ROAD.

ELEV. = 211.7 FEET (NAVD88, GEOID 18)

3) FIELD WORK WAS COMPLETED SEPTEMBER, 2025.

4) ABSTRACTING WAS COMPLETED OCTOBER, 2025.

C1		C2		C3	
PI	76+99.80	PI	83+28.37	PI	106+00.35
Δ	17°16'36.1" (RT)	Δ	08°08'01.3" (LT)	Δ	19°45'42.4" (LT)
D	04°47'28.9"	D	03°10'09.6"	D	10°12'58.9"
T	181.67'	T	128.54'	T	97.69'
L	360.58'	L	256.64'	L	193.43'
R	1195.81'	R	1807.83'	R	560.82'
PC	75+18.13	PC	81+99.84	PC	105+02.66
PT	78+78.71	PT	84+56.48	PT	106+96.09

POINT NO	SURFACE NORTHING	SURFACE EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
12	13,925,168.93	2,947,191.59	212.14'	62+24.18	-15.39	SET 5/8"IR W/LANDTECH CAP
13	13,925,668.60	2,947,171.60	211.86'	67+24.19	-16.24	SET 5/8"IR W/LANDTECH CAP
14	13,926,168.29	2,947,152.45	210.49'	72+24.25	-16.69	SET 5/8"IR W/LANDTECH CAP
15	13,926,669.20	2,947,151.14	208.62'	77+22.41	-20.18	SET 5/8"IR W/LANDTECH CAP
31	13,927,015.21	2,947,274.97	206.58'	80+86.39	16.56	FND BRASS CAP "K116 BM01"
16	13,927,142.89	2,947,313.92	204.62'	82+19.32	23.19	SET 5/8"IR W/LANDTECH CAP
17	13,927,638.27	2,947,371.86	204.64'	87+15.40	19.23	SET 5/8"IR W/LANDTECH CAP
18	13,928,136.15	2,947,412.64	206.79'	92+14.97	16.81	SET 5/8"IR W/LANDTECH CAP
19	13,928,635.26	2,947,455.58	205.53'	97+16.01	15.83	SET 5/8"IR W/LANDTECH CAP
20	13,929,132.83	2,947,500.90	205.44'	102+15.63	15.23	SET 5/8"IR W/LANDTECH CAP
21	13,929,632.05	2,947,510.79	206.06'	107+12.08	18.73	SET 5/8"IR W/LANDTECH CAP

(-) DENOTES OFFSET LEFT

THIS SURVEY SUBSTANTIALLY COMPLIES WITH THE CURRENT TEXAS SOCIETY OF PROFESSIONAL SURVEYOR'S MANUAL OF PRACTICE REQUIREMENTS FOR A CATEGORY 1B, CONDITION 2, STANDARD LAND SURVEY.

STATE OF TEXAS
REGISTERED
MICHAEL R. G. JOINES
7064
PROFESSIONAL
LAND SURVEYOR

05-20-2026
MICHAEL R.G. JOINES — DATE
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 7064

NO.	REVISIONS	DATE	NAME
1			
2			
3			
4			
5			

WALLER COUNTY ENGINEERING DEPARTMENT

LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068 F: 713-861-4131
TBPELS Registration No. 10019100

PROJECT TITLE:	MATHIS ROAD	
	100' SOUTH OF ROCHEN ROAD TO BETKA ROAD	CIVIL STANDARD
SHEET DESCRIPTION:	SURVEY CONTROL INDEX	
DRAWN BY: VG	SHEET 4 OF 20	DATE: 05/20/2026
CK'D BY: MJ	SCALE: AS SHOWN	SHEET NO: 137

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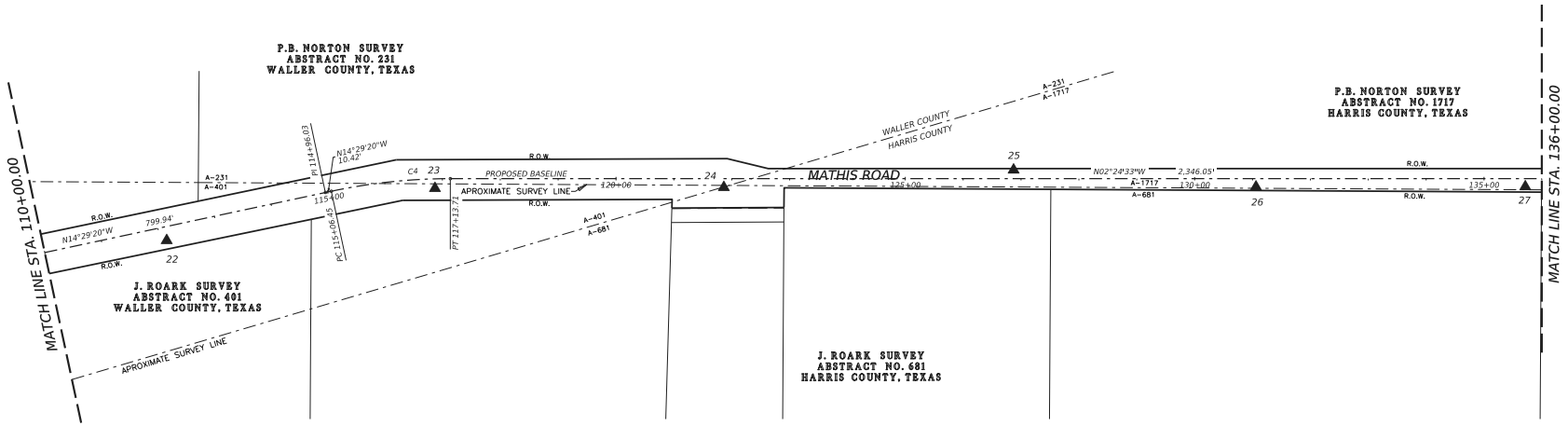

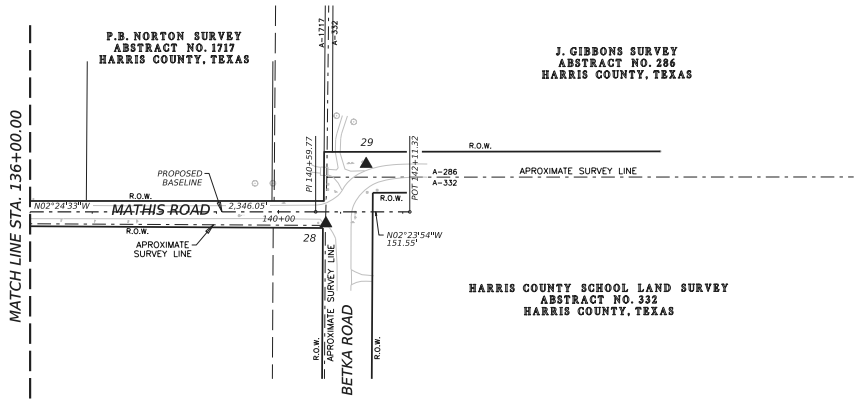

C4

PI 116+10.47
Δ 12°04'46.5" (RT)
D 05°49'41.4"
T 104.02'
L 207.26'
R 983.08'
PC 115+06.45
PT 117+13.71

POINT NO	SURFACE NORTHING	SURFACE EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
22	13,930,115.82	2,947,390.80	210.96'	112+10.47	23.59	SET 5/8"IR W/LANDTECH CAP
23	13,930,575.27	2,947,281.42	222.53'	116+86.69	16.44	SET 5/8"IR W/LANDTECH CAP
24	13,931,073.98	2,947,258.71	226.48'	121+86.37	15.08	SET 5/8"IR W/LANDTECH CAP
25	13,931,573.06	2,947,207.56	236.83'	126+87.15	-15.05	SET 5/8"IR W/LANDTECH CAP
26	13,931,992.72	2,947,219.27	232.22'	131+05.95	14.29	SET 5/8"IR W/LANDTECH CAP
27	13,932,457.70	2,947,199.26	227.44'	135+71.36	13.85	SET 5/8"IR W/LANDTECH CAP
28	13,932,962.28	2,947,182.82	232.34'	140+76.19	18.64	SET COTTON SPINDLE
29	13,933,023.19	2,947,084.58	232.37'	141+41.16	-76.97	SET 5/8"IR W/LANDTECH CAP

(-) DENOTES OFFSET LEFT

SCALE: 1" = 100' (22"X34")
SCALE: 1" = 200' (11"X17")

NOTES:

1) BEARINGS ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATUM OF 1983 (NAD 83 (2011), EPOCH 2010.00). ALL COORDINATES AND DISTANCES SHOWN ARE SURFACE VALUES IN U.S. SURVEY FEET AND MAY BE CONVERTED TO GRID BY APPLYING THE SURFACE ADJUSTMENT FACTOR OF 0.99992562756.

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ELEV. = 211.7 FEET (NAVD88, GEOID 18)

3) FIELD WORK WAS COMPLETED SEPTEMBER, 2025.

4) ABSTRACTING WAS COMPLETED OCTOBER, 2025.

THIS SURVEY SUBSTANTIALLY COMPLIES WITH THE CURRENT TEXAS SOCIETY OF PROFESSIONAL SURVEYOR'S MANUAL OF PRACTICE REQUIREMENTS FOR A CATEGORY 1B, CONDITION 2, STANDARD LAND SURVEY.

STATE OF TEXAS
REGISTERED
MICHAEL R. G. JOINES
7064
PROFESSIONAL
LAND SURVEYOR

05-20-2026
DATE

MICHAEL R.G. JOINES
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 7064

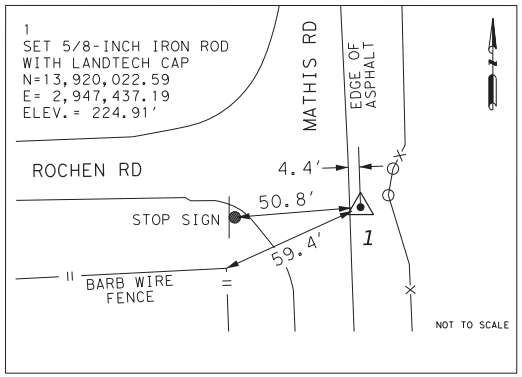
NO.	REVISIONS	DATE	NAME
1			
2			
3			
4			
5			

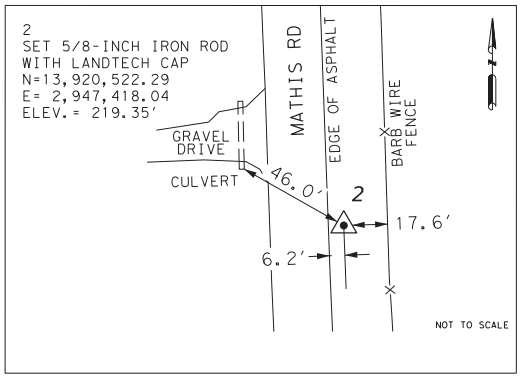
WALLER COUNTY ENGINEERING DEPARTMENT

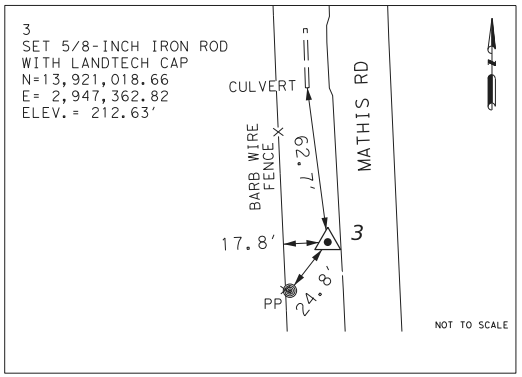
LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068 F: 713-861-4131
TBPELS Registration No. 10019100

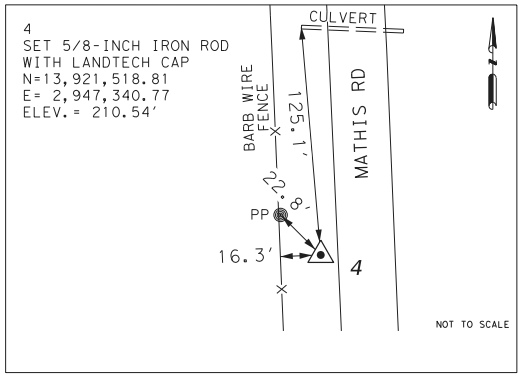
PROJECT TITLE:	MATHIS ROAD
	100' SOUTH OF ROCHEN ROAD TO BETKA ROAD
CIVIL STANDARD	
SHEET DESCRIPTION:	SURVEY CONTROL INDEX
DRAWN BY: VG	SHEET 5 OF 20
DATE: 05/20/2026	
CK'D BY: MJ	SCALE: AS SHOWN
SHEET NO: 138	

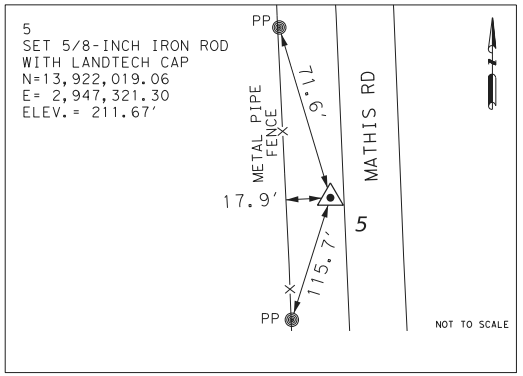
S:\2025\2520069 Waller Pct 2 Mathis Road\Cadd\Control\2520069_Mathis_S02C.dgn

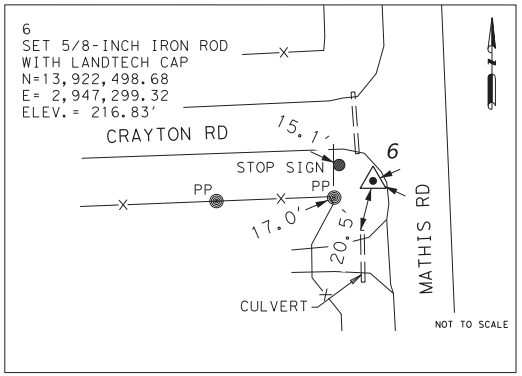


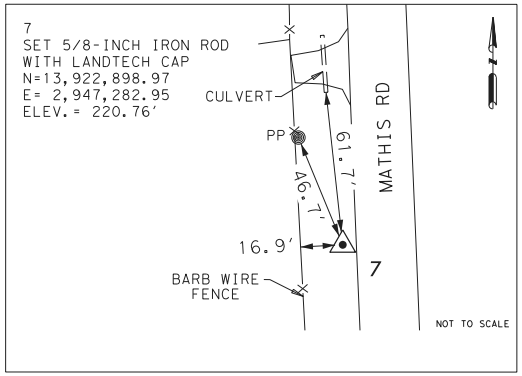


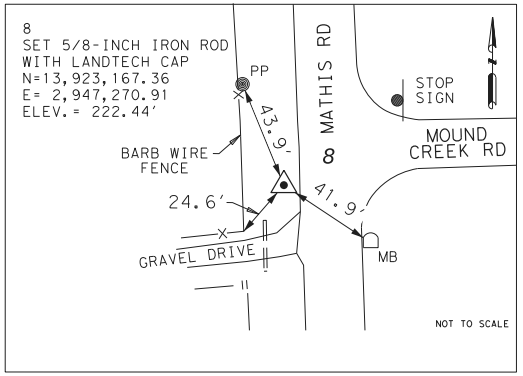


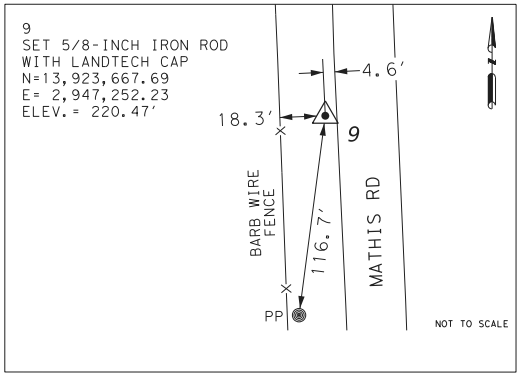












NOTES:

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2) ELEVATIONS ARE BASED ON NGS HEIGHT MODERNIZATION SURVEY STATION HCFCD_MONO028, PID DR8233, AN ALUMINUM ROD IN A SLEEVE WITH AN ALUMINUM ACCESS COVER STAMPED "FLOODPLAIN REFERENCE MARK", APPROXIMATELY 50 FEET NORTHEAST OF THE INTERSECTION OF MEADOW CREEK ROAD AND CHAPARRAL ROAD.

ELEV. = 211.7 FEET (NAVD88, GEOID 18)

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STATE OF TEXAS
REGISTERED
MICHAEL R. G. JOINES
7064
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05-20-2026
DATE

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TEXAS REGISTRATION NO. 7064

NO.	REVISIONS	DATE	NAME
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WALLER COUNTY ENGINEERING DEPARTMENT

LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068 F: 713-861-4131
TBPELS Registration No. 10019100

PROJECT TITLE:	MATHIS ROAD		
	100' SOUTH OF ROCHEN ROAD TO BETKA ROAD		CIVIL STANDARD
SHEET DESCRIPTION:	HORIZONTAL & VERTICAL CONTROL SHEET		
DRAWN BY: VG	SHEET 6 OF 20		DATE: 05/20/2026
CK'D BY: MJ	SCALE: AS SHOWN		SHEET NO: 139

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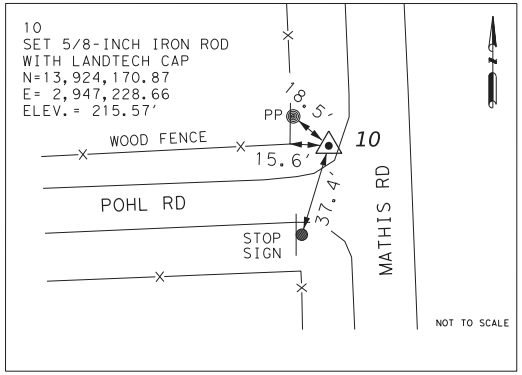
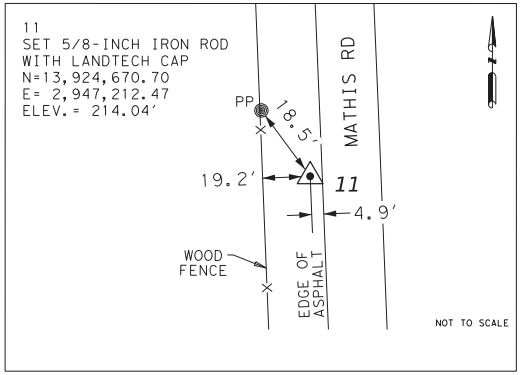
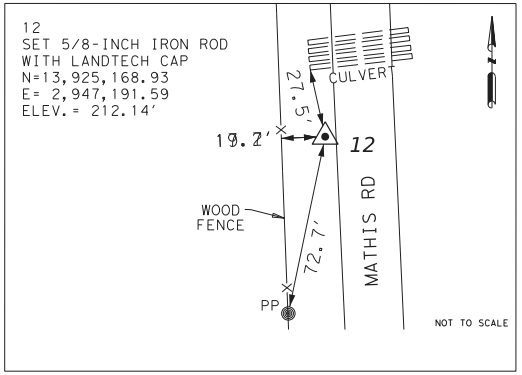
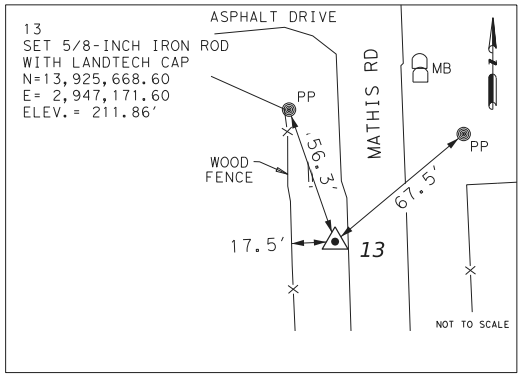
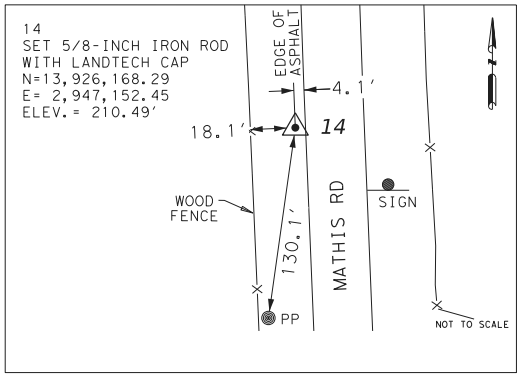
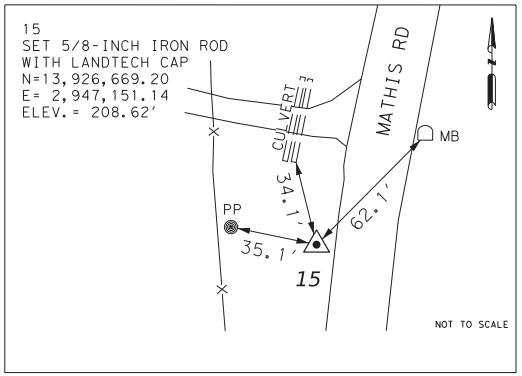


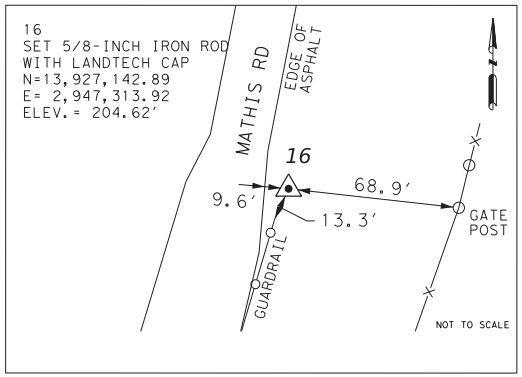


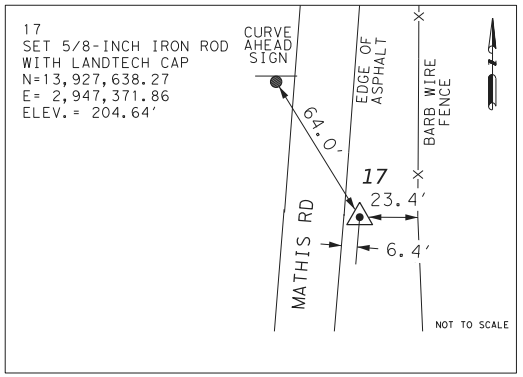


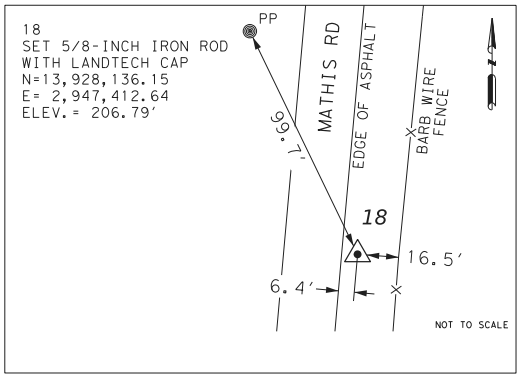












NOTES:

1) BEARINGS ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATUM OF 1983 (NAD 83 (2011), EPOCH 2010.00). ALL COORDINATES AND DISTANCES SHOWN ARE SURFACE VALUES IN U.S. SURVEY FEET AND MAY BE CONVERTED TO GRID BY APPLYING THE SURFACE ADJUSTMENT FACTOR OF 0.99992562756.

2) ELEVATIONS ARE BASED ON NGS HEIGHT MODERNIZATION SURVEY STATION HCFCD_MONO02R, PID DR8233, AN ALUMINUM ROD IN A SLEEVE WITH AN ALUMINUM ACCESS COVER STAMPED "FLOODPLAIN REFERENCE MARK", APPROXIMATELY 50 FEET NORTHEAST OF THE INTERSECTION OF MEADOW CREEK ROAD AND CHAPARRAL ROAD.

ELEV. = 211.7 FEET (NAVD88, GEOID 18)

3) FIELD WORK WAS COMPLETED SEPTEMBER, 2025.

4) ABSTRACTING WAS COMPLETED OCTOBER, 2025.

THIS SURVEY SUBSTANTIALLY COMPLIES WITH THE CURRENT TEXAS SOCIETY OF PROFESSIONAL SURVEYOR'S MANUAL OF PRACTICE REQUIREMENTS FOR A CATEGORY 1B, CONDITION 2, STANDARD LAND SURVEY.

STATE OF TEXAS
REGISTERED
MICHAEL R. G. JOINES
7064
PROFESSIONAL
LAND SURVEYOR

05-20-2026
DATE

MICHAEL R.G. JOINES
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 7064

NO.	REVISIONS	DATE	NAME
1			
2			
3			
4			
5			

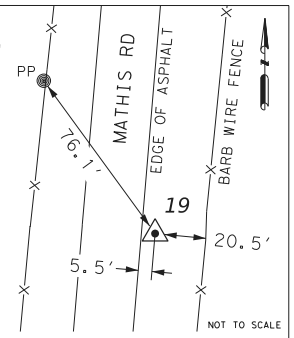
WALLER COUNTY ENGINEERING DEPARTMENT

LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068 F: 713-861-4131
TBPELS Registration No. 10019100

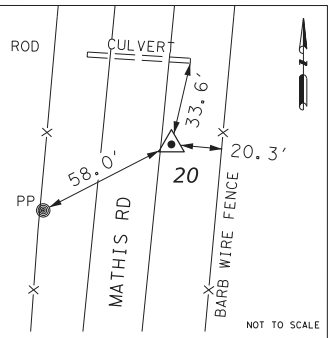
PROJECT TITLE:	MATHIS ROAD
	100' SOUTH OF ROCHEN ROAD TO BETKA ROAD
CIVIL STANDARD	
SHEET DESCRIPTION:	HORIZONTAL & VERTICAL CONTROL SHEET
DRAWN BY: VG	SHEET 7 OF 20
DATE: 05/20/2026	
CK'D BY: MJ	SCALE: AS SHOWN
SHEET NO: 140	

S:\2025\2520069 Waller Pct 2 Mathis Road\Cadd\Control\2520069_Mathis_S03B.dgn

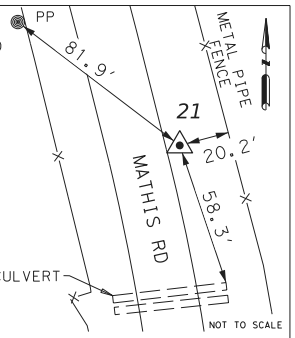
19
SET 5/8-INCH IRON ROD
WITH LANDTECH CAP
N=13,928,635.26
E= 2,947,455.58
ELEV. = 205.53'



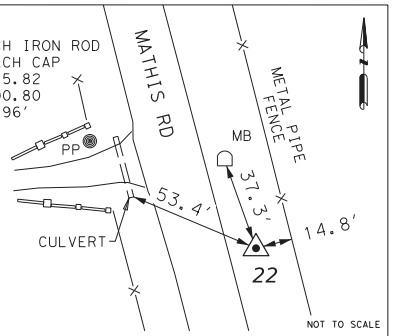
20
SET 5/8-INCH IRON ROD
WITH LANDTECH CAP
N=13,929,132.83
E= 2,947,500.90
ELEV. = 205.44'



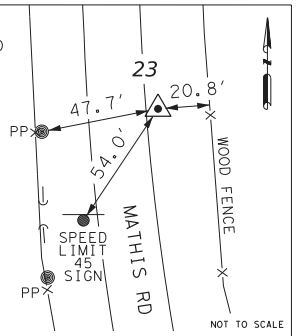
21
SET 5/8-INCH IRON ROD
WITH LANDTECH CAP
N=13,929,632.05
E= 2,947,510.79
ELEV. = 206.06'



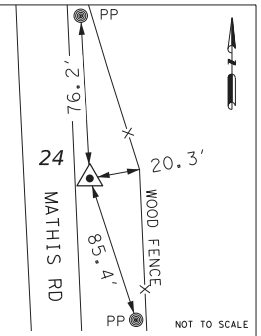
22
SET 5/8-INCH IRON ROD
WITH LANDTECH CAP
N=13,930,115.82
E= 2,947,390.80
ELEV. = 210.96'



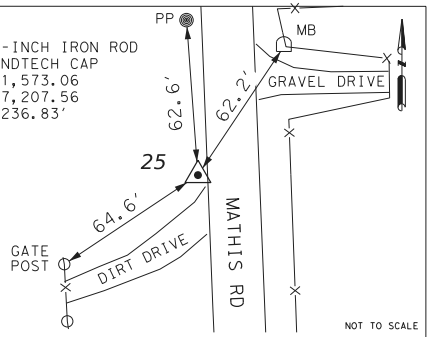
23
SET 5/8-INCH IRON ROD
WITH LANDTECH CAP
N=13,930,575.27
E= 2,947,281.42
ELEV. = 222.53'



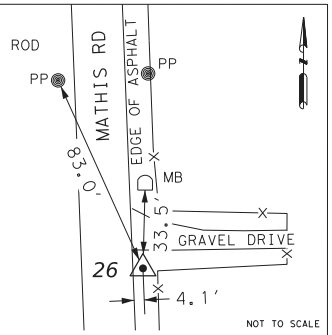
24
SET 5/8-INCH IRON ROD
WITH LANDTECH CAP
N=13,931,073.98
E= 2,947,258.71
ELEV. = 226.48'



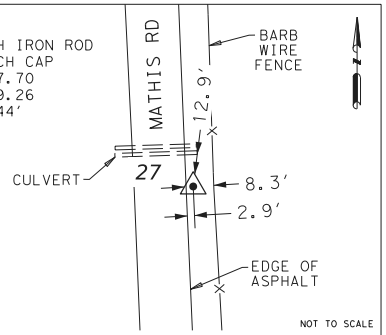
25
SET 5/8-INCH IRON ROD
WITH LANDTECH CAP
N=13,931,573.06
E= 2,947,207.56
ELEV. = 236.83'



26
SET 5/8-INCH IRON ROD
WITH LANDTECH CAP
N=13,931,992.72
E= 2,947,219.27
ELEV. = 232.22'



27
SET 5/8-INCH IRON ROD
WITH LANDTECH CAP
N=13,932,457.70
E= 2,947,199.26
ELEV. = 227.44'



NOTES:

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STATE OF TEXAS
REGISTERED
MICHAEL R. G. JOINES
7064
PROFESSIONAL
LAND SURVEYOR

05-20-2026
DATE

MICHAEL R.G. JOINES
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 7064

NO.	REVISIONS	DATE	NAME
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WALLER COUNTY
ENGINEERING DEPARTMENT

LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068 F: 713-861-4131
TBPELS Registration No. 10019100

PROJECT TITLE:	MATHIS ROAD
	100' SOUTH OF ROCHEN ROAD TO BETKA ROAD
CIVIL STANDARD	
SHEET DESCRIPTION:	HORIZONTAL & VERTICAL CONTROL SHEET
DRAWN BY: VG	SHEET 8 OF 20
DATE: 05/20/2026	
CK'D BY: MJ	SCALE: AS SHOWN
SHEET NO: 141	

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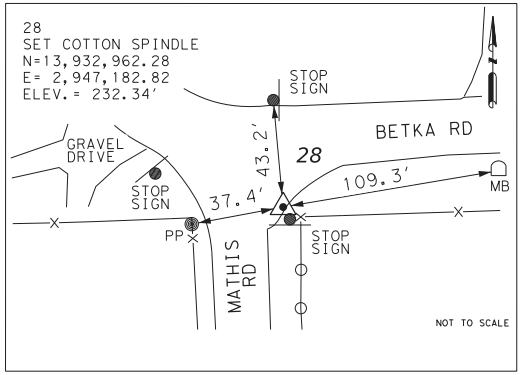

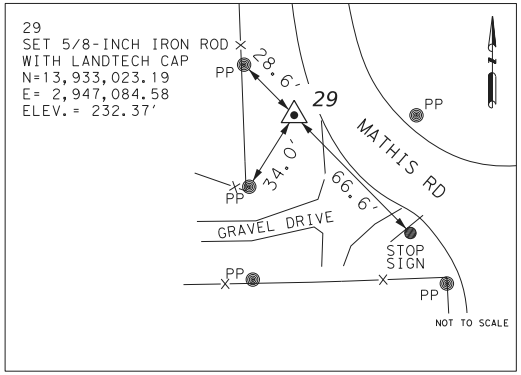

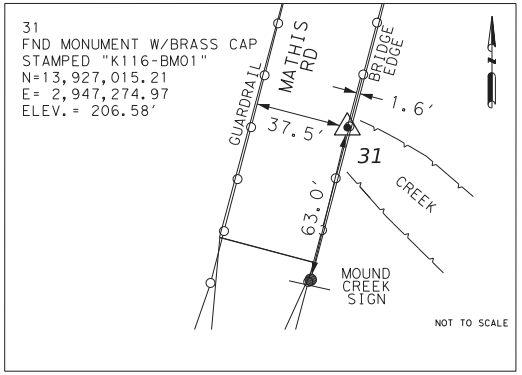

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STATE OF TEXAS
REGISTERED
MICHAEL R. G. JOINES
7064
PROFESSIONAL
LAND SURVEYOR

05-20-2026

MICHAEL R.G. JOINES
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 7064
DATE

NO.	REVISIONS	DATE	NAME
1			
2			
3			
4			
5			

WALLER COUNTY
ENGINEERING DEPARTMENT

LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068 F: 713-861-4131
TBPELS Registration No. 10019100

PROJECT TITLE:	MATHIS ROAD
	100' SOUTH OF ROCHEN ROAD TO BETKA ROAD
CIVIL STANDARD	
SHEET DESCRIPTION:	HORIZONTAL & VERTICAL CONTROL SHEET
DRAWN BY: VG	SHEET 9 OF 20
DATE: 05/20/2026	
CK'D BY: MJ	SCALE: AS SHOWN
SHEET NO: 142	

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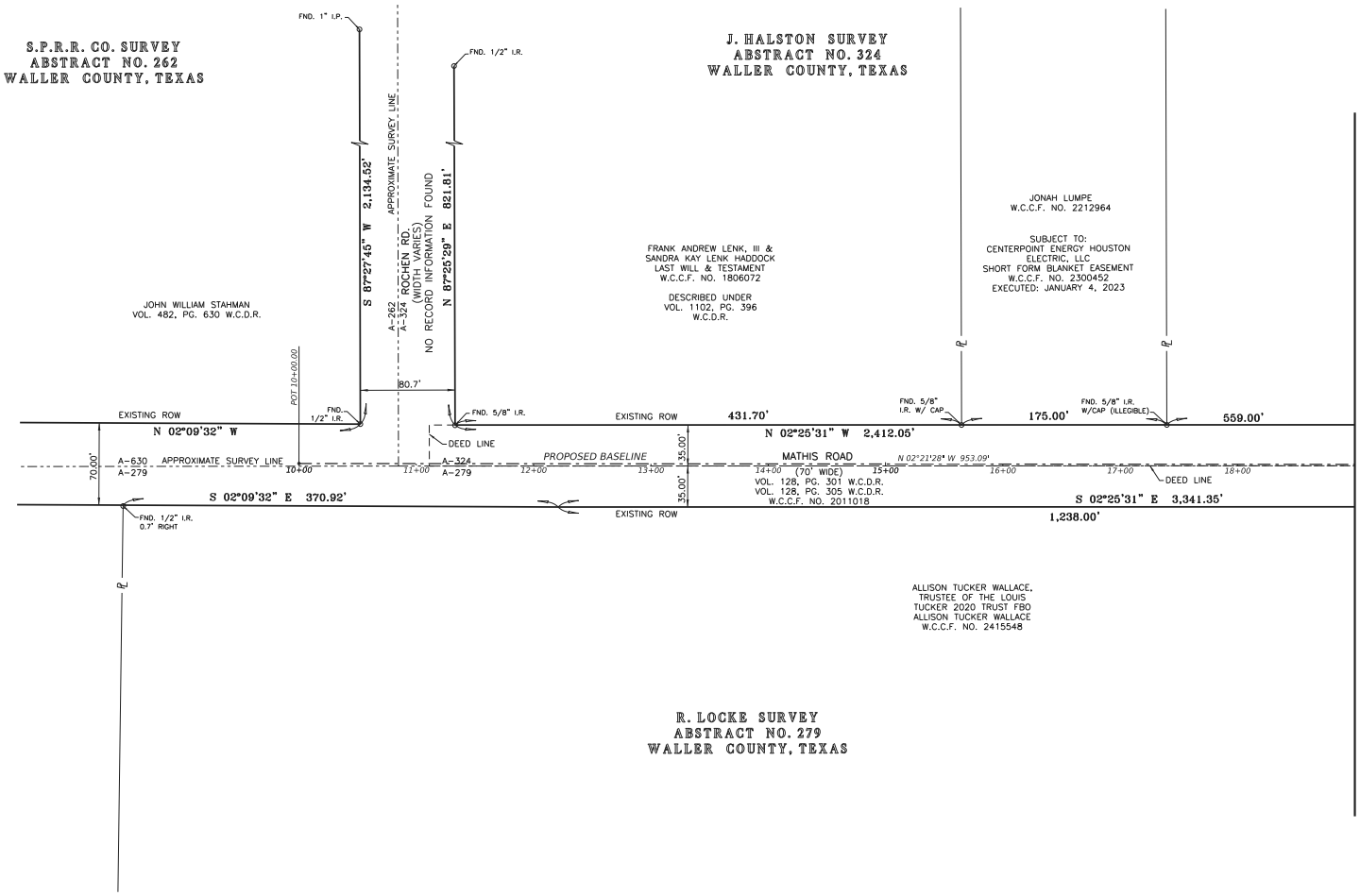

0 50 100

SCALE: 1" = 50' (22"X34")
SCALE: 1" = 100' (11"X17")

NOTES:

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STATE OF TEXAS
REGISTERED
MICHAEL R. G. JOINES
7064
PROFESSIONAL
LAND SURVEYOR

05-20-2026

MICHAEL R.G. JOINES, DATE
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 7064

ABBREVIATIONS:

FND.	=	FOUND
I.R.	=	IRON ROD
B.L.	=	BUILDING LINE
ESMT.	=	EASEMENT
R.O.W.	=	RIGHT OF WAY
H.C.D.R.	=	HARRIS COUNTY DEED RECORDS
H.C.M.R.	=	HARRIS COUNTY MAP RECORDS
W.C.C.F.	=	WALLER COUNTY CLERK'S FILE
W.C.D.R.	=	WALLER COUNTY DEED RECORDS

NO.	REVISIONS	DATE	NAME
1			
2			
3			
4			
5			

WALLER COUNTY
ENGINEERING DEPARTMENT

LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068 F: 713-861-4131
TBPELS Registration No. 10019100

PROJECT TITLE:	MATHIS ROAD		
	100' SOUTH OF ROCHEN ROAD TO BETKA ROAD		CIVIL STANDARD
SHEET DESCRIPTION:	TOPOGRAPHIC SURVEY		
DRAWN BY: DD	SHEET 10 OF 20		DATE: 05/20/2026
CK'D BY: MJ	SCALE: AS SHOWN		SHEET NO: 143

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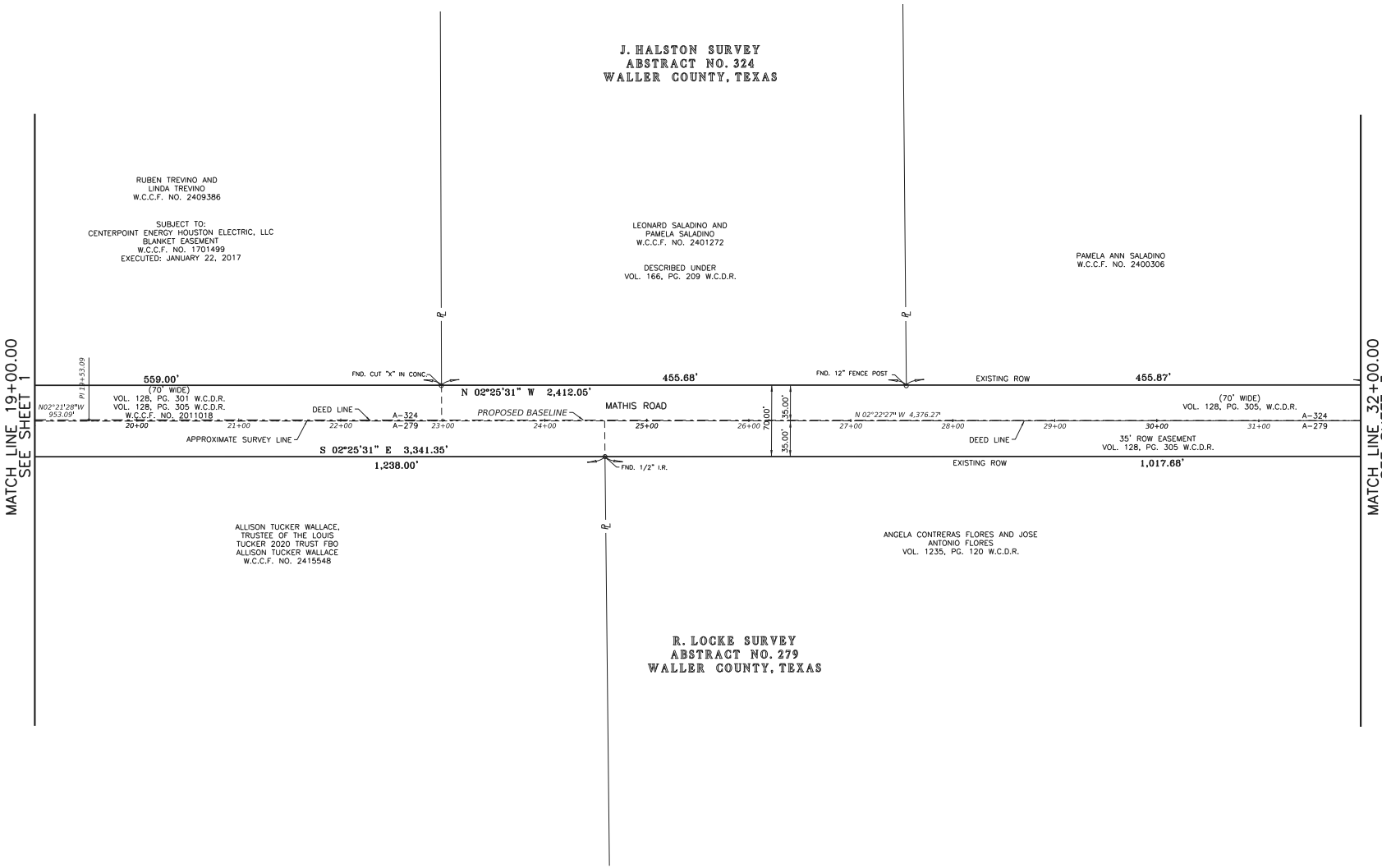

0 50 100

SCALE: 1" = 50' (22"X34")
SCALE: 1" = 100' (11"X17")

NOTES:

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STATE OF TEXAS
REGISTERED
MICHAEL R. G. JOINES
7064
PROFESSIONAL
LAND SURVEYOR

05-20-2026
MICHAEL R.G. JOINES DATE
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 7064

ABBREVIATIONS:

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R.O.W.	=	RIGHT OF WAY
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W.C.C.F.	=	WALLER COUNTY CLERK'S FILE
W.C.D.R.	=	WALLER COUNTY DEED RECORDS

NO.	REVISIONS	DATE	NAME
1			
2			
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WALLER COUNTY
ENGINEERING DEPARTMENT

LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068 F: 713-861-4131
TBPELS Registration No. 10019100

PROJECT TITLE:	MATHIS ROAD		
	100' SOUTH OF ROCHEN ROAD TO BETKA ROAD		CIVIL STANDARD
SHEET DESCRIPTION:	TOPOGRAPHIC SURVEY		
DRAWN BY: DD	SHEET 11 OF 20		DATE: 05/20/2026
CK'D BY: MJ	SCALE: AS SHOWN		SHEET NO: 144

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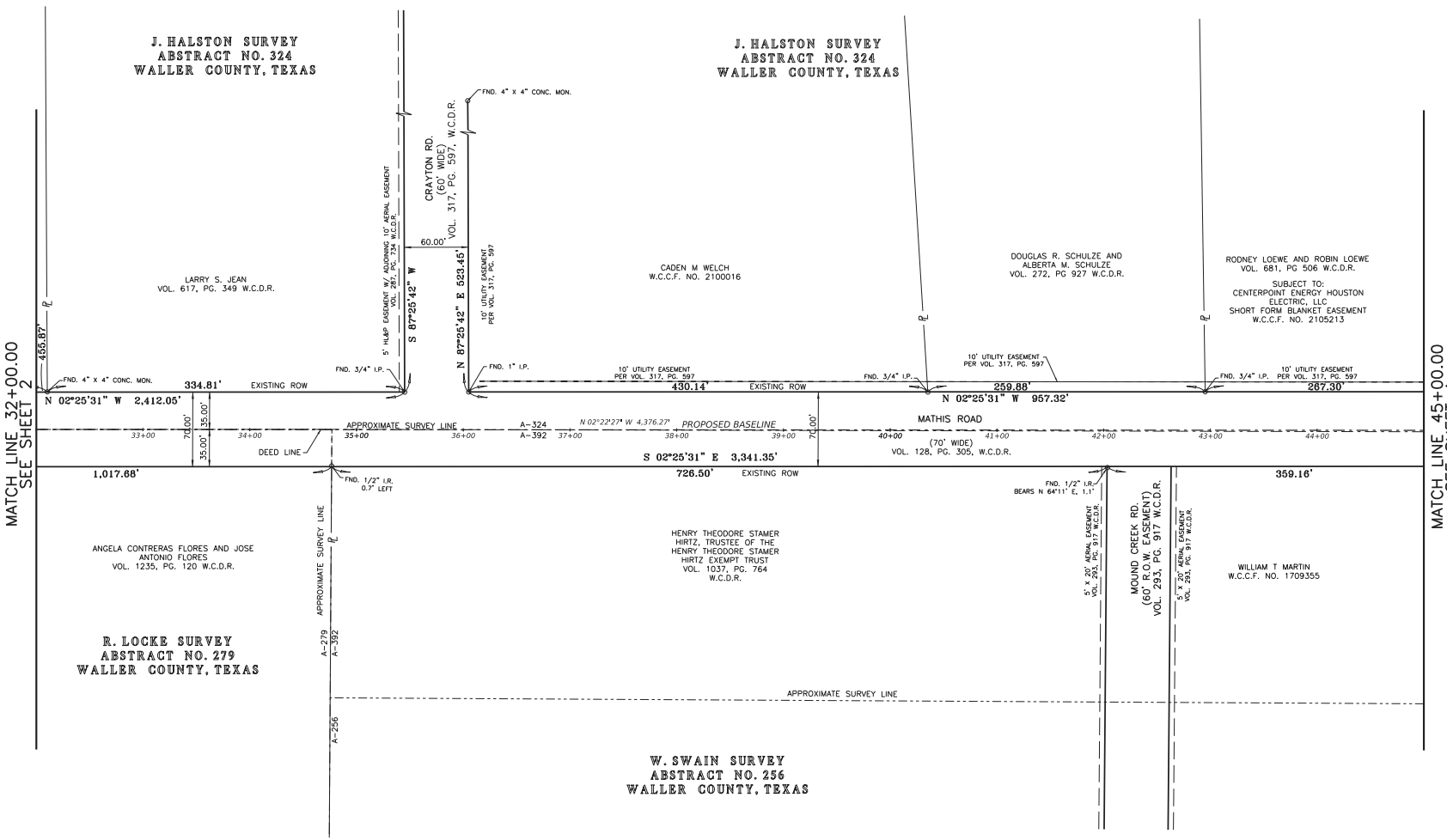

0 50 100

SCALE: 1" = 50' (22"X34")
SCALE: 1" = 100' (11"X17")

NOTES:

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STATE OF TEXAS
REGISTERED
MICHAEL R. G. JOINES
7064
PROFESSIONAL
LAND SURVEYOR

05-20-2026

MICHAEL R.G. JOINES — DATE
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 7064

ABBREVIATIONS:

FND.	=	FOUND
I.R.	=	IRON ROD
B.L.	=	BUILDING LINE
ESMT.	=	EASEMENT
R.O.W.	=	RIGHT OF WAY
H.C.D.R.	=	HARRIS COUNTY DEED RECORDS
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W.C.C.F.	=	WALLER COUNTY CLERK'S FILE
W.C.D.R.	=	WALLER COUNTY DEED RECORDS

NO.	REVISIONS	DATE	NAME
1			
2			
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WALLER COUNTY ENGINEERING DEPARTMENT

LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068 F: 713-861-4131
TBPELS Registration No. 10019100

PROJECT TITLE:	MATHIS ROAD		
	100' SOUTH OF ROCHEN ROAD TO BETKA ROAD		CIVIL STANDARD
SHEET DESCRIPTION:	TOPOGRAPHIC SURVEY		
DRAWN BY: DD	SHEET 12 OF 20		DATE: 05/20/2026
CK'D BY: MJ	SCALE: AS SHOWN		SHEET NO: 145

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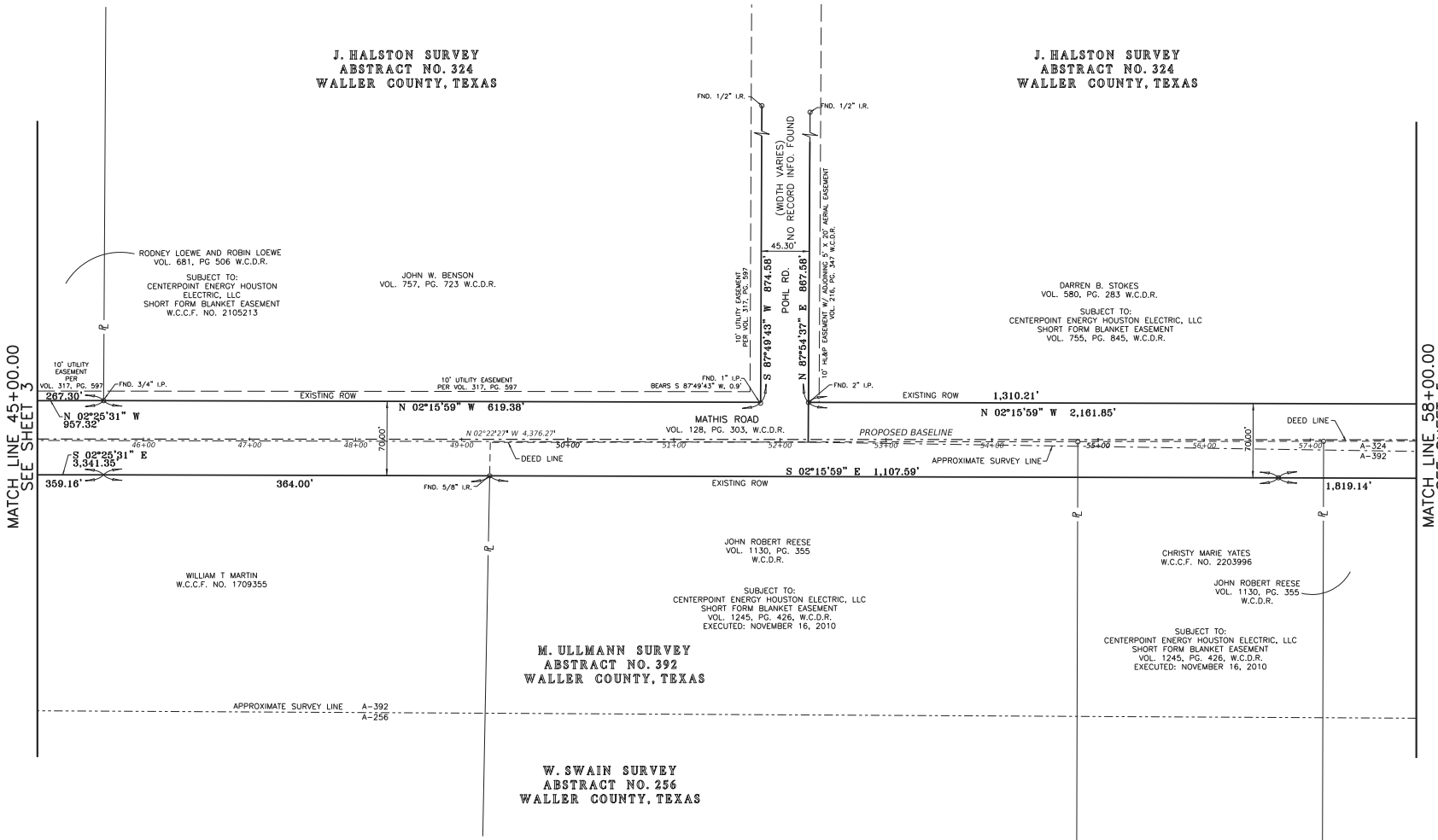

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SCALE: 1" = 50' (22"X34")
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STATE OF TEXAS
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MICHAEL R. G. JOINES
7064
PROFESSIONAL
LAND SURVEYOR

05-20-2026

MICHAEL R.G. JOINES — DATE
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 7064

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LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068 F: 713-861-4131
TBPELS Registration No. 10019100

PROJECT TITLE:	MATHIS ROAD		
	100' SOUTH OF ROCHEN ROAD TO BETKA ROAD		CIVIL STANDARD
SHEET DESCRIPTION:	TOPOGRAPHIC SURVEY		
DRAWN BY: DD	SHEET 13 OF 20		DATE: 05/20/2026
CK'D BY: MJ	SCALE: AS SHOWN		SHEET NO: 146

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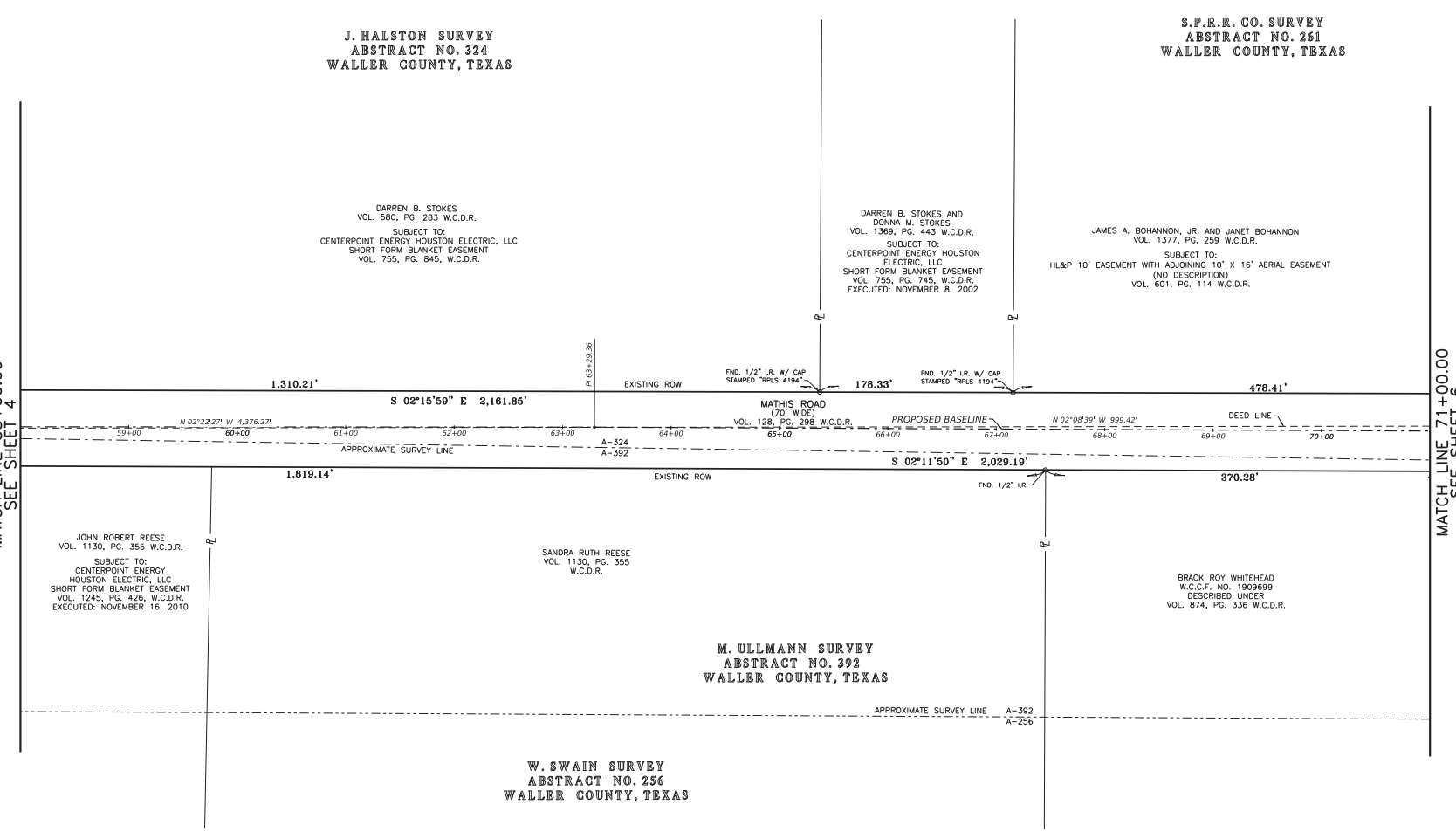

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SCALE: 1" = 50' (22"X34")
SCALE: 1" = 100' (11"X17")

NOTES:

1) BEARINGS ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATUM OF 1983 (NAD 83 (2011), EPOCH 2010.00). ALL COORDINATES AND DISTANCES SHOWN ARE SURFACE VALUES IN U.S. SURVEY FEET AND MAY BE CONVERTED TO GRID BY APPLYING THE SURFACE ADJUSTMENT FACTOR OF 0.99992562756.

2) FIELD WORK WAS COMPLETED SEPTEMBER, 2025.

3) ABSTRACTING WAS COMPLETED OCTOBER, 2025.

THIS SURVEY SUBSTANTIALLY COMPLIES WITH THE CURRENT TEXAS SOCIETY OF PROFESSIONAL SURVEYOR'S MANUAL OF PRACTICE REQUIREMENTS FOR A CATEGORY 1B, CONDITION 2, STANDARD LAND SURVEY.

STATE OF TEXAS
REGISTERED
MICHAEL R. G. JOINES
7064
PROFESSIONAL
LAND SURVEYOR

MICHAEL R.G. JOINES 05-20-2026
MICHAEL R.G. JOINES DATE
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 7064

ABBREVIATIONS:

FND.	=	FOUND
I.R.	=	IRON ROD
B.L.	=	BUILDING LINE
ESMT.	=	EASEMENT
R.O.W.	=	RIGHT OF WAY
H.C.D.R.	=	HARRIS COUNTY DEED RECORDS
H.C.M.R.	=	HARRIS COUNTY MAP RECORDS
W.C.C.F.	=	WALLER COUNTY CLERK'S FILE
W.C.D.R.	=	WALLER COUNTY DEED RECORDS

NO.	REVISIONS	DATE	NAME
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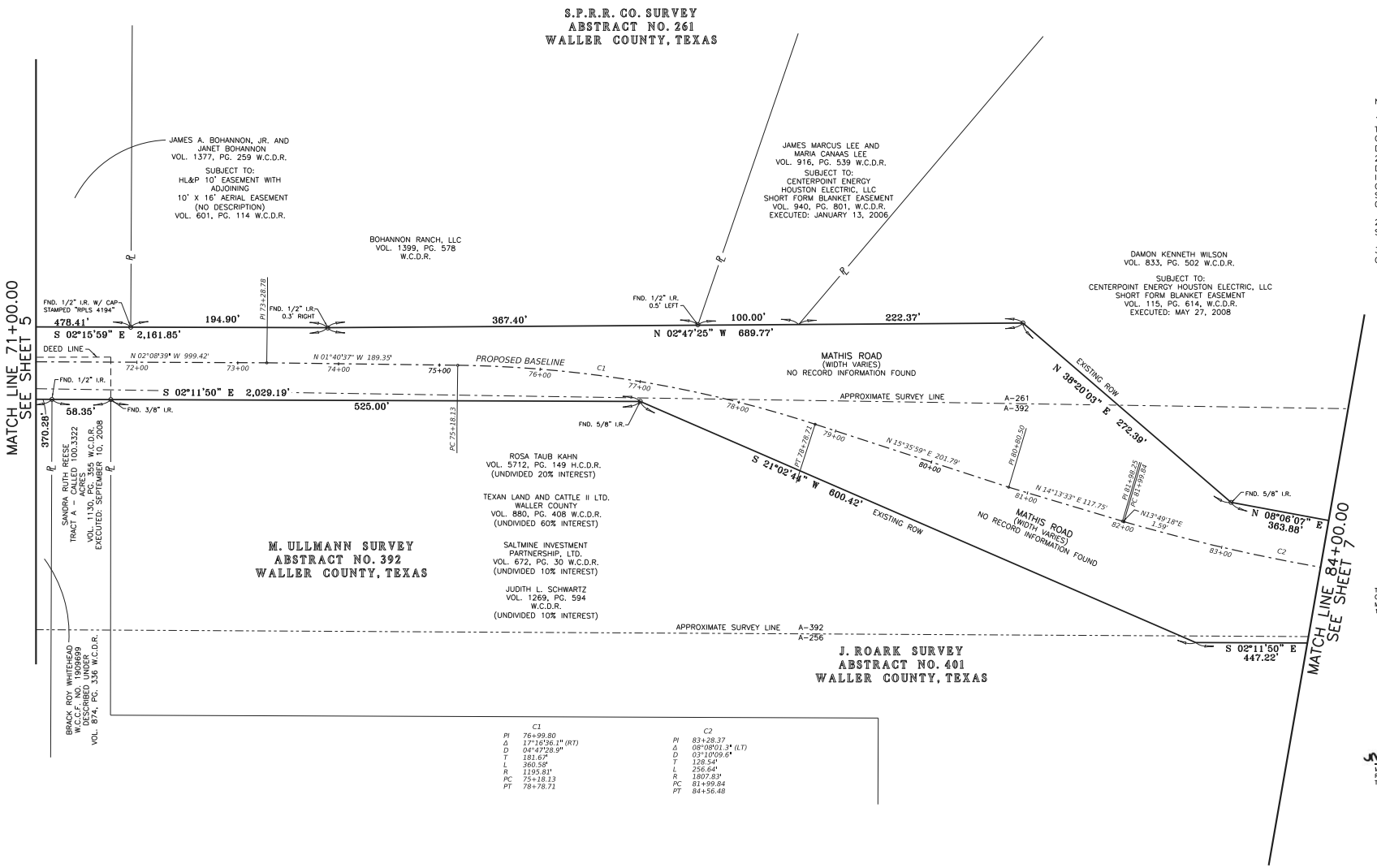
WALLER COUNTY ENGINEERING DEPARTMENT

LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068 F: 713-861-4131
TBPELS Registration No. 10019100

PROJECT TITLE:	MATHIS ROAD		
	100' SOUTH OF ROCHEN ROAD TO BETKA ROAD		CIVIL STANDARD
SHEET DESCRIPTION:	TOPOGRAPHIC SURVEY		
DRAWN BY: DD	SHEET 14 OF 20		DATE: 05/20/2026
CK'D BY: MJ	SCALE: AS SHOWN		SHEET NO: 147

S:\2025\2520069 Waller Pct 2 Mathis Road\Cadd\MathisRD_ROW-Sheet-05.dgn



0 50 100

SCALE: 1" = 50' (22"X34")
SCALE: 1" = 100' (11"X17")

NOTES:

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STATE OF TEXAS
REGISTERED
MICHAEL R. G. JOINES
7064
PROFESSIONAL LAND SURVEYOR

05-20-2026
MICHAEL R.G. JOINES — DATE
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 7064

ABBREVIATIONS:

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NO.	REVISIONS	DATE	NAME
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WALLER COUNTY ENGINEERING DEPARTMENT

LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068 F: 713-861-4131
TBPELS Registration No. 10019100

PROJECT TITLE:	MATHIS ROAD		
	100' SOUTH OF ROCHEN ROAD TO BETKA ROAD		CIVIL STANDARD
SHEET DESCRIPTION:	TOPOGRAPHIC SURVEY		
DRAWN BY: DD	SHEET 15 OF 20		DATE: 05/20/2026
CK'D BY: MJ	SCALE: AS SHOWN		SHEET NO: 148

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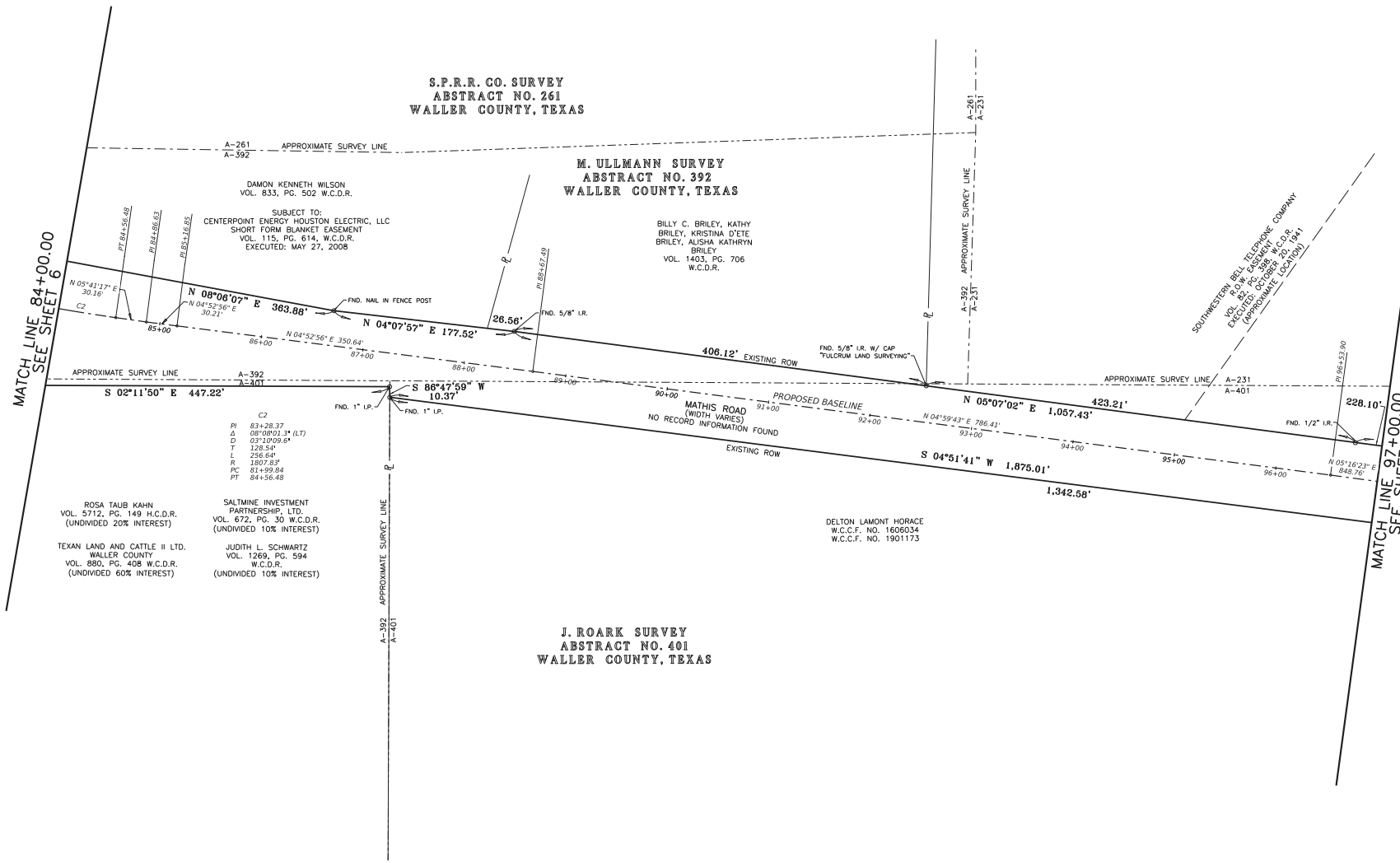

0 50 100

SCALE: 1" = 50' (22"X34")
SCALE: 1" = 100' (11"X17")

NOTES:

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STATE OF TEXAS
REGISTERED
MICHAEL R. G. JOINES
7064
PROFESSIONAL LAND SURVEYOR

05-20-2026

MICHAEL R.G. JOINES — DATE
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TEXAS REGISTRATION NO. 7064

ABBREVIATIONS:

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WALLER COUNTY ENGINEERING DEPARTMENT

LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068 F: 713-861-4131
TBPELS Registration No. 10019100

PROJECT TITLE:	MATHIS ROAD		
	100' SOUTH OF ROCHEN ROAD TO BETKA ROAD		CIVIL STANDARD
SHEET DESCRIPTION:	TOPOGRAPHIC SURVEY		
DRAWN BY: DD	SHEET 16 OF 20		DATE: 05/20/2026
CK'D BY: MJ	SCALE: AS SHOWN		SHEET NO: 149

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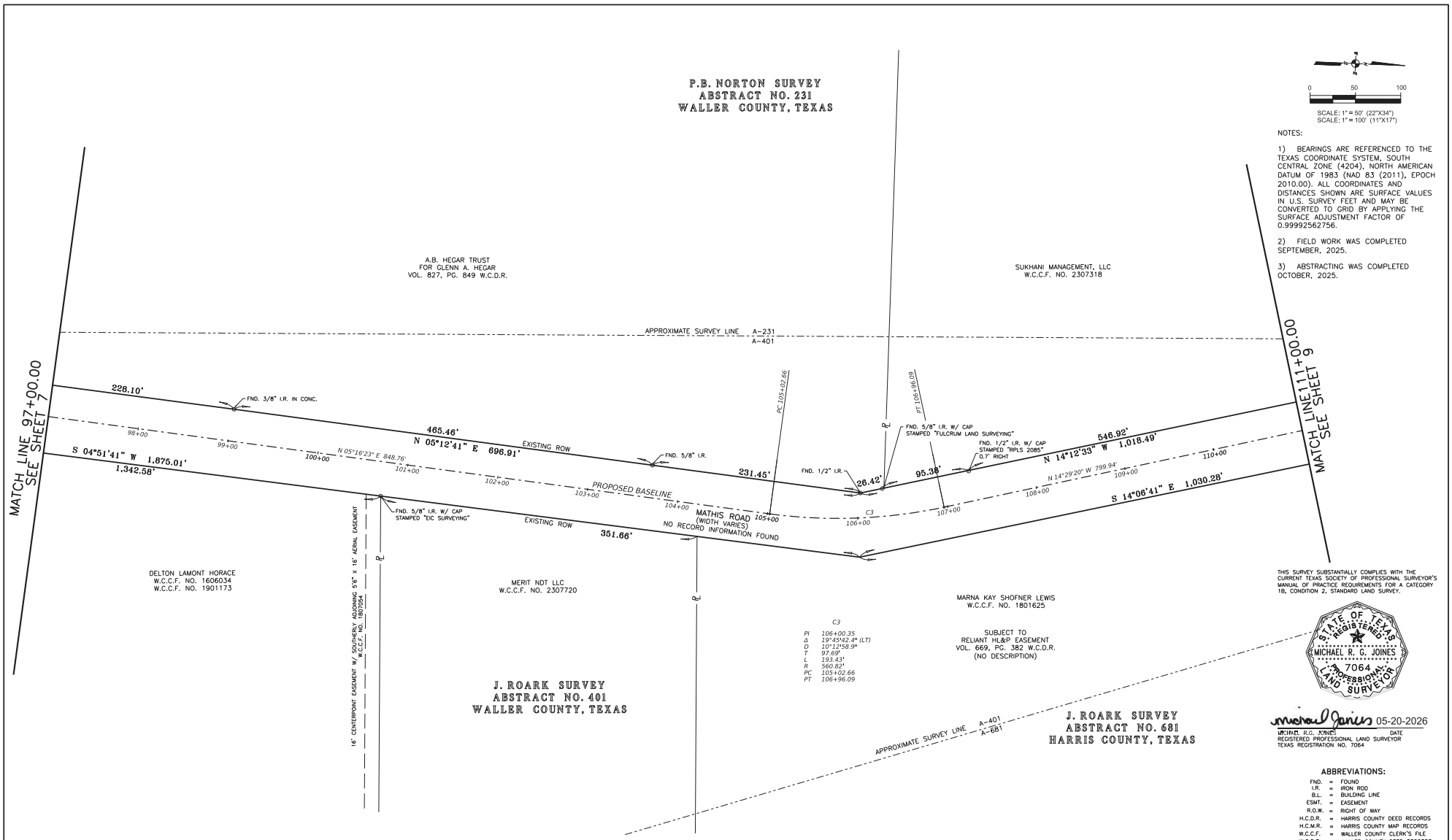

0 50 100

SCALE: 1" = 50' (22"X34")
SCALE: 1" = 100' (11"X17")

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STATE OF TEXAS
REGISTERED
MICHAEL R. G. JOINES
7064
PROFESSIONAL
LAND SURVEYOR

05-20-2026

MICHAEL R.G. JOINES — DATE
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 7064

ABBREVIATIONS:

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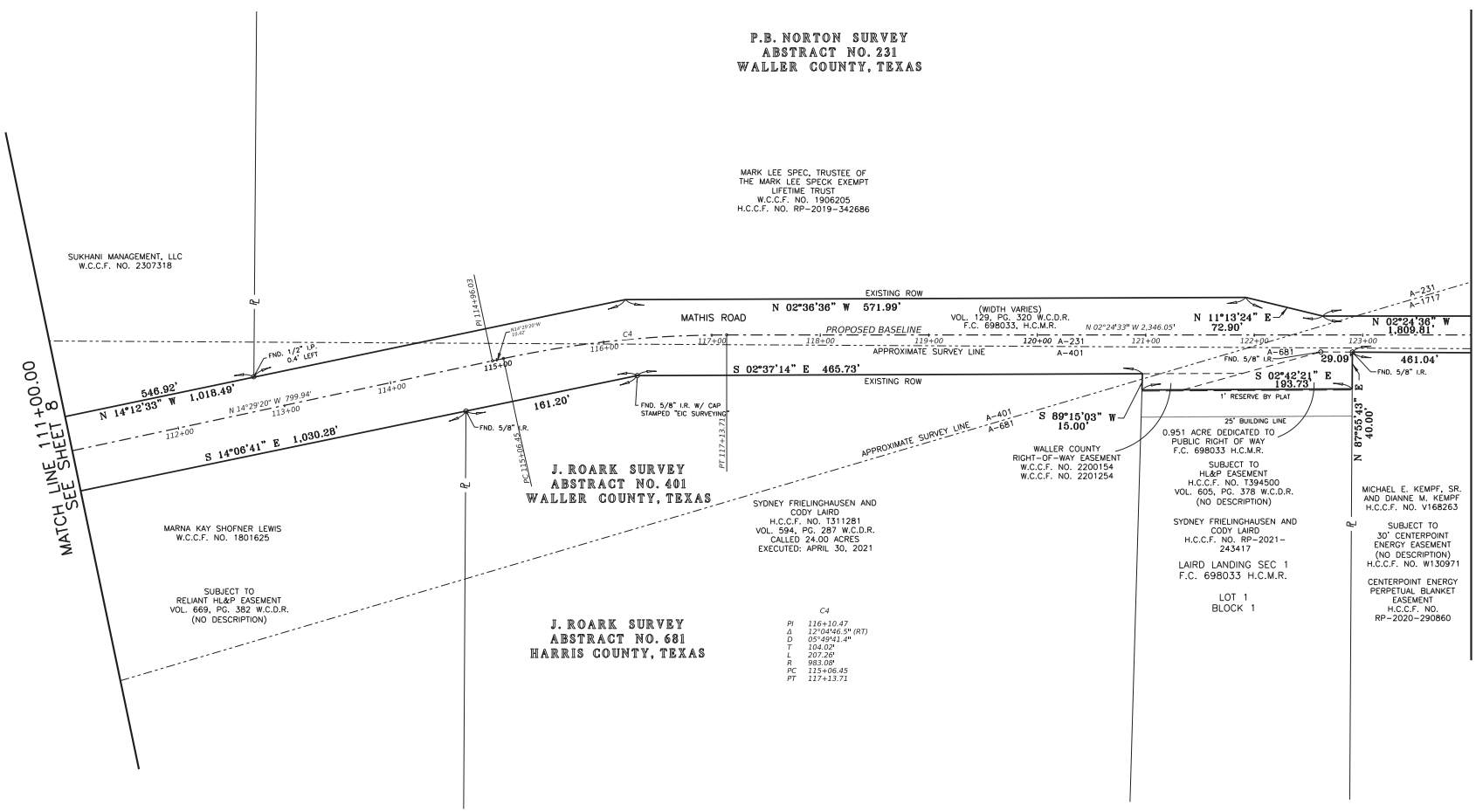
WALLER COUNTY ENGINEERING DEPARTMENT

LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068 F: 713-861-4131
TBPELS Registration No. 10019100

PROJECT TITLE:	MATHIS ROAD		
	100' SOUTH OF ROCHEN ROAD TO BETKA ROAD		CIVIL STANDARD
SHEET DESCRIPTION:	TOPOGRAPHIC SURVEY		
DRAWN BY: DD	SHEET 17 OF 20		DATE: 05/20/2026
CK'D BY: MJ	SCALE: AS SHOWN		SHEET NO: 150

S:\2025\2520069 Waller Pct 2 Mathis Road\Cadd\MathisRD_ROW-Sheet-08.dgn



0 50 100

SCALE: 1" = 50' (22"X34")
SCALE: 1" = 100' (11"X17")

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STATE OF TEXAS
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05-20-2026
MICHAEL R.G. JOINES — DATE
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NO.	REVISIONS	DATE	NAME
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WALLER COUNTY ENGINEERING DEPARTMENT

LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068 F: 713-861-4131
TBPELS Registration No. 10019100

PROJECT TITLE:	MATHIS ROAD		
	100' SOUTH OF ROCHEN ROAD TO BETKA ROAD		CIVIL STANDARD
SHEET DESCRIPTION:	TOPOGRAPHIC SURVEY		
DRAWN BY: DD	SHEET 18 OF 20		DATE: 05/20/2026
CK'D BY: MJ	SCALE: AS SHOWN		SHEET NO: 151

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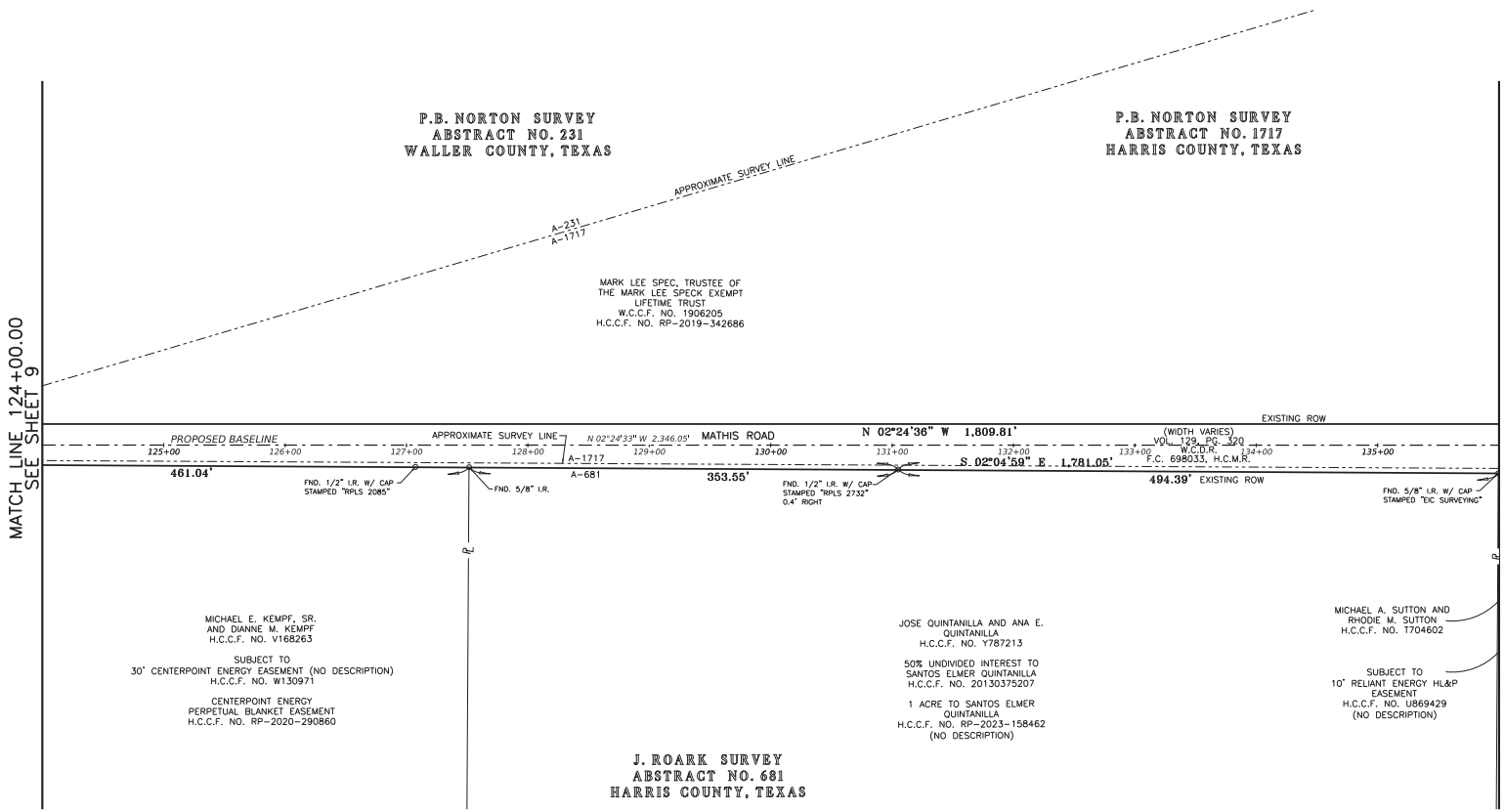

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STATE OF TEXAS
REGISTERED
MICHAEL R. G. JOINES
7064
PROFESSIONAL
LAND SURVEYOR

05-20-2026

MICHAEL R.G. JOINES — DATE
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 7064

ABBREVIATIONS:

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NO.	REVISIONS	DATE	NAME
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WALLER COUNTY
ENGINEERING DEPARTMENT

LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068 F: 713-861-4131
TBPELS Registration No. 10019100

PROJECT TITLE:	MATHIS ROAD		
	100' SOUTH OF ROCHEN ROAD TO BETKA ROAD		CIVIL STANDARD
SHEET DESCRIPTION:	TOPOGRAPHIC SURVEY		
DRAWN BY: DD	SHEET 19 OF 20		DATE: 05/20/2026
CK'D BY: MJ	SCALE: AS SHOWN		SHEET NO: 152

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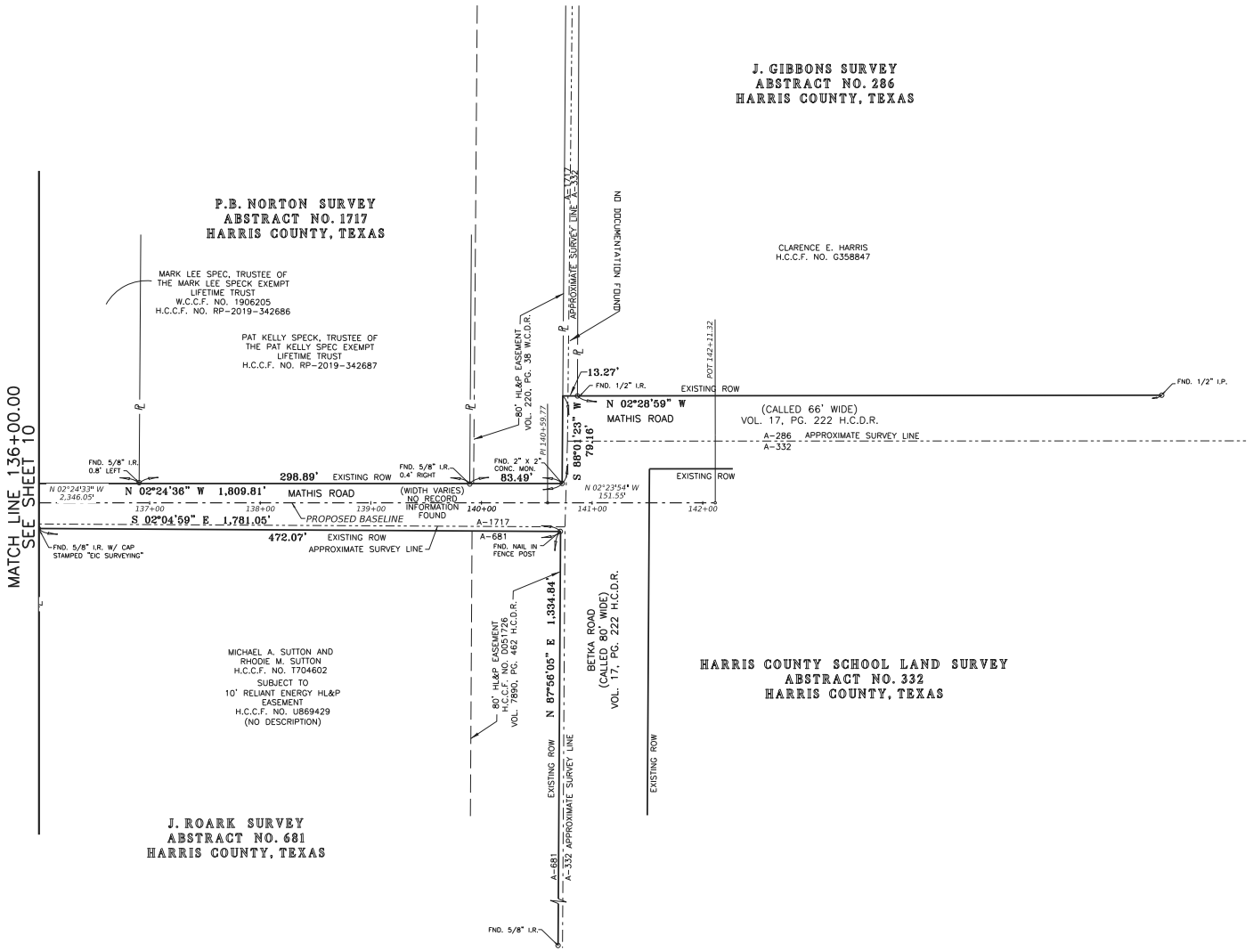

0 50 100

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STATE OF TEXAS
REGISTERED
MICHAEL R. G. JOINES
7064
PROFESSIONAL
LAND SURVEYOR

05-20-2026

MICHAEL R.G. JOINES — DATE
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 7064

ABBREVIATIONS:

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NO.	REVISIONS	DATE	NAME
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WALLER COUNTY
ENGINEERING DEPARTMENT
10

LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068 F: 713-861-4131
TBPELS Registration No. 10019100

PROJECT TITLE:	MATHIS ROAD		
	100' SOUTH OF ROCHEN ROAD TO BETKA ROAD		CIVIL STANDARD
SHEET DESCRIPTION:	TOPOGRAPHIC SURVEY		
DRAWN BY: DD	SHEET 20 OF 20		DATE: 05/20/2026
CK'D BY: MJ	SCALE: AS SHOWN		SHEET NO: 153

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100% SUBMITTAL

	QUALITY LEVEL D	QUALITY LEVEL B	QUALITY LEVEL C
ATT TELEPHONE	T1-1-D	T1-1	
ATT FOC DUCT BANK	FOC1-2-D	FOC1-2	
COMCAST FOC		FOC2-1	
COMCAST CTV	C2-1-D		
CNP ELECTRIC OH	OHE1-1-D		OHE1-1-C
CNP ELECTRIC TRANSMISSION OH	TRANS1-1-D		
FLOW CONTROL ELECTRIC	E2-1-D		

- FIBER OPTIC MANHOLE
- TELEPHONE PEDESTAL
- SAI TELEPHONE
- POWER POLE
- POWER POLE W RISER
- GENERIC HANDHOLE
- GENERIC MARKER

GENERAL NOTES:

1. THE HORIZONTAL LOCATION OF UTILITIES SHOWN ON THESE DRAWINGS IS ARRIVED AT BY THE USE OF DESIGNATING EQUIPMENT. THESE UTILITY LINES WERE NOT UNCOVERED TO VERIFY EXACT VERTICAL LOCATIONS.
2. THE ACCURACY OF THE HORIZONTAL LOCATION OF UTILITY LINES SHOWN ON THESE PLANS CAN BE INFLUENCED BY FACTORS BEYOND COBBFENDLEY'S CONTROL, SUCH AS CONDUCTIVITY OF MATERIALS AND THEIR SURROUNDINGS, SOIL MOISTURE CONTENT, PROXIMITY OF OTHER UNDERGROUND UTILITIES OR STRUCTURES, DEPTH OF UTILITY, ETC. THEREFORE, ONLY THE ACCURACY OBTAINED BY ACTUAL EXCAVATION OF UTILITIES CAN BE GUARANTEED APPLICABLE TO ENGINEERING AND/OR SURVEYING STANDARDS.
3. AS-BUILT DRAWINGS WERE USED TO COMPARE DESIGNATED LOCATIONS TO CONSTRUCTION AS-BUILT LOCATIONS.
4. THE USE OF THE HORIZONTAL LOCATIONS OF THE UTILITIES SHOWN ON THESE PLANS DOES NOT RELIEVE THE CONTRACTOR FROM THE DUTY TO COMPLY WITH APPLICABLE UTILITY DAMAGE PREVENTION LAWS AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO, GIVING NOTIFICATION TO UTILITY OWNER'S "ONE-CALL" CENTERS BEFORE EXCAVATION.
5. ELECTRONIC DEPTHS (ED) ARE SUBJECT TO VARIABLE CONDITIONS AND ARE NOT RELIABLE FOR ACCURATE DEPTH DETERMINATIONS WITHOUT QUALITY LEVEL A TEST HOLES.
6. SUE FIELD INVESTIGATION WAS COMPLETED IN AUGUST 2025. ANY UTILITIES THAT MAY HAVE BEEN INSTALLED, REMOVED, OR RELOCATED AFTER THIS DATE WOULD NOT BE INCLUDED IN THIS PLAN.

UTILITY QUALITY LEVELS

(AS DEFINED FROM ASCE PUBLICATION CI/ASCE STANDARD 38-22)

QUALITY LEVEL "D"
INFORMATION DERIVED FROM EXISTING RECORDS AND/OR ORAL RECOLLECTIONS.

QUALITY LEVEL "C"
INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES AND BY USING PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION TO QUALITY LEVEL "D" INFORMATION.

QUALITY LEVEL "B"
INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES. THIS INFORMATION IS SURVEYED TO PROJECT TOLERANCES AND TIED TO PROJECT SURVEY CONTROL.

QUALITY LEVEL "A"
PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES AT A SPECIFIC POINT. DIAMETERS SHOWN ARE VERIFIED VISUALLY AND MAY NOT BE EXACT OR MAY BE DOCUMENTED AS PER RECORDS MEANING A TYPICAL 60 INCH DIAMETER PIPE WILL NOT BE EXPOSED OF BOTH SIDES OD ITS WIDTH BY A STANDARD TEST HOLE. THIS INFORMATION IS SURVEYED TO PROJECT TOLERANCES AND TIED TO PROJECT SURVEY CONTROL.

STATE OF TEXAS
LISA A. GARNER
99375
LICENSED PROFESSIONAL ENGINEER
5/28/2026

0' 20' 40'
SCALE : 1"=40'

SHEET 1 OF 12

DATE: 5/28/2026 1:05:20 PM
FILE: D:\Projects\2025\06092 HR Green\01 Waller County-Mathis Rd\400 CAD\406 SUE\SUE Mathis Rd.dgn

REV. NO.	DATE	DESCRIPTION	BY

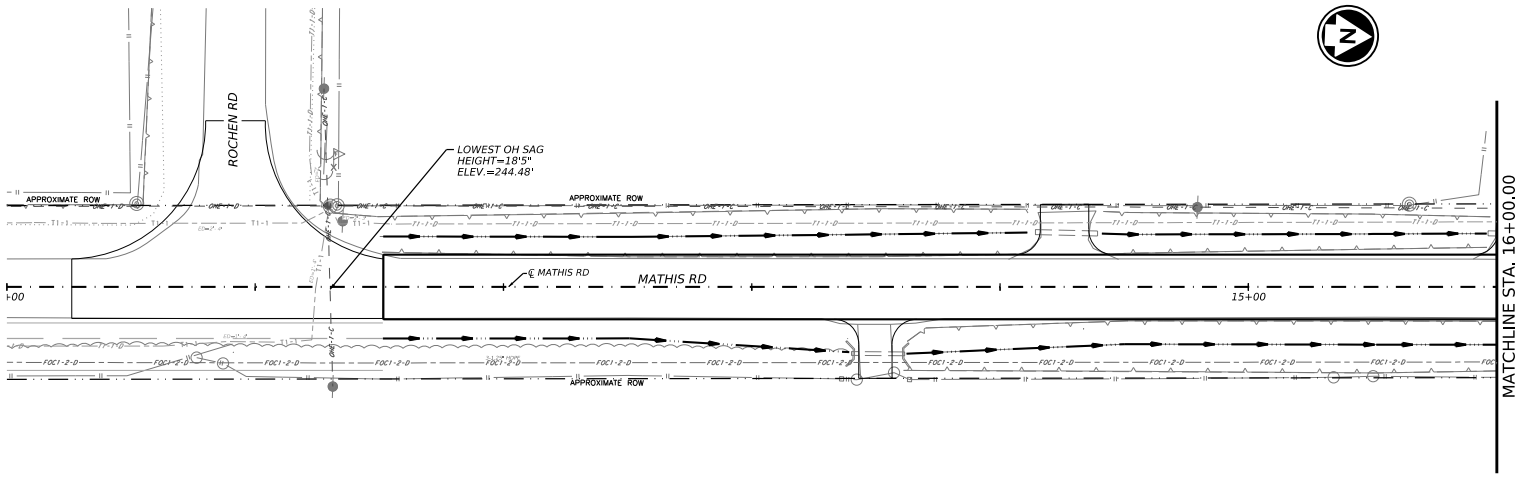
WALLER COUNTY
ENGINEERING DEPARTMENT

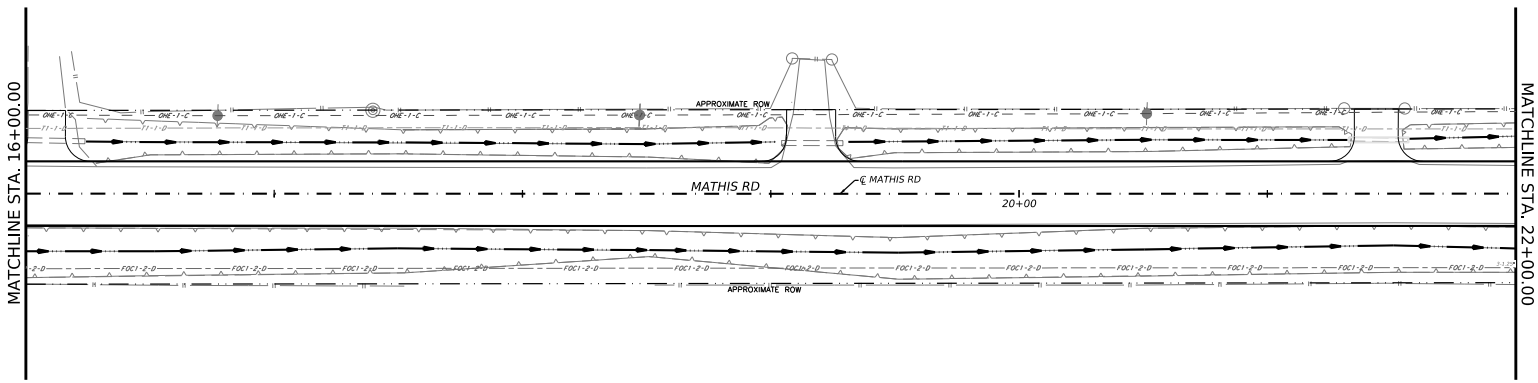
CobbFendley
TBPE F- No. 274 / TBPLS F-No. 10046700
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262 | www.cobbfendley.com

MATHIS ROAD
EXISTING UTILITY LAYOUT
LEGEND

DN: JLM	CONT.	SECT.	JOB	HIGHWAY
CK DN: LAG				MATHIS ROAD
DW: JLM	DIST	COUNTY		SHEET NO.
CK DW: LAG		WALLER		154

100% SUBMITTAL





STATE OF TEXAS
LISA A. GARNER
99375
LICENSED
PROFESSIONAL ENGINEER
5/28/2026

0' 20' 40'
SCALE : 1"=40'

SHEET 2 OF 12

DATE: 5/28/2026 1:05:22 PM
FILE: D:\Projects\2025\06092 HR Green\01 Waller County-Mathis Rd\400 CAD\406 SUE\SUE Mathis Rd.dgn

REV. NO.	DATE	DESCRIPTION	BY

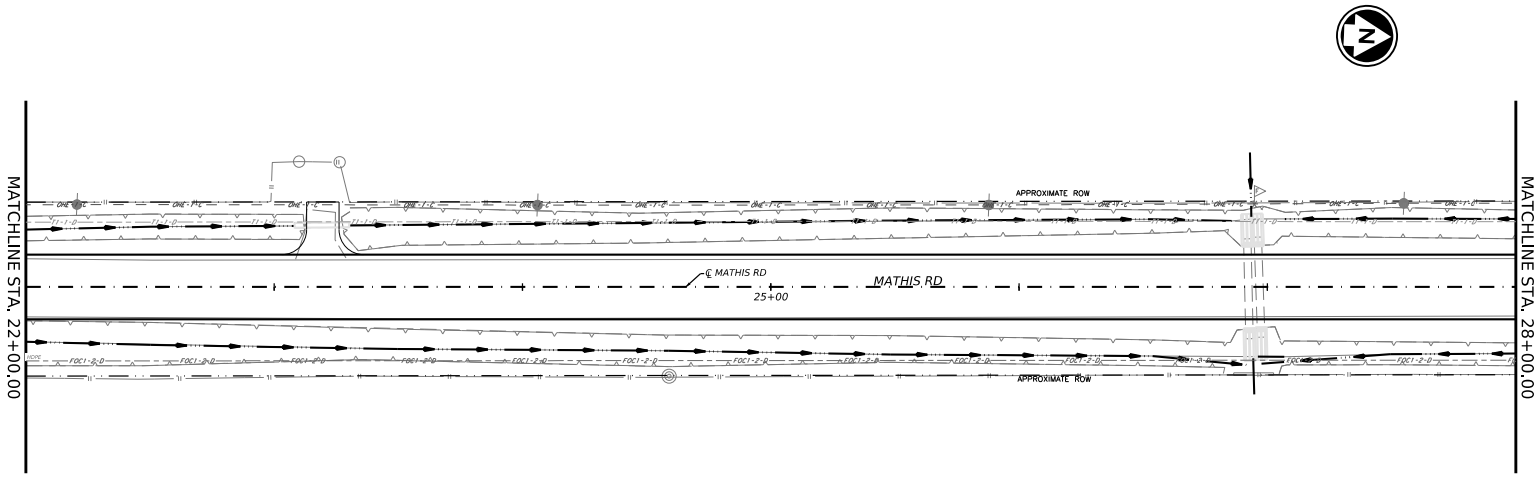
WALLER COUNTY ENGINEERING DEPARTMENT

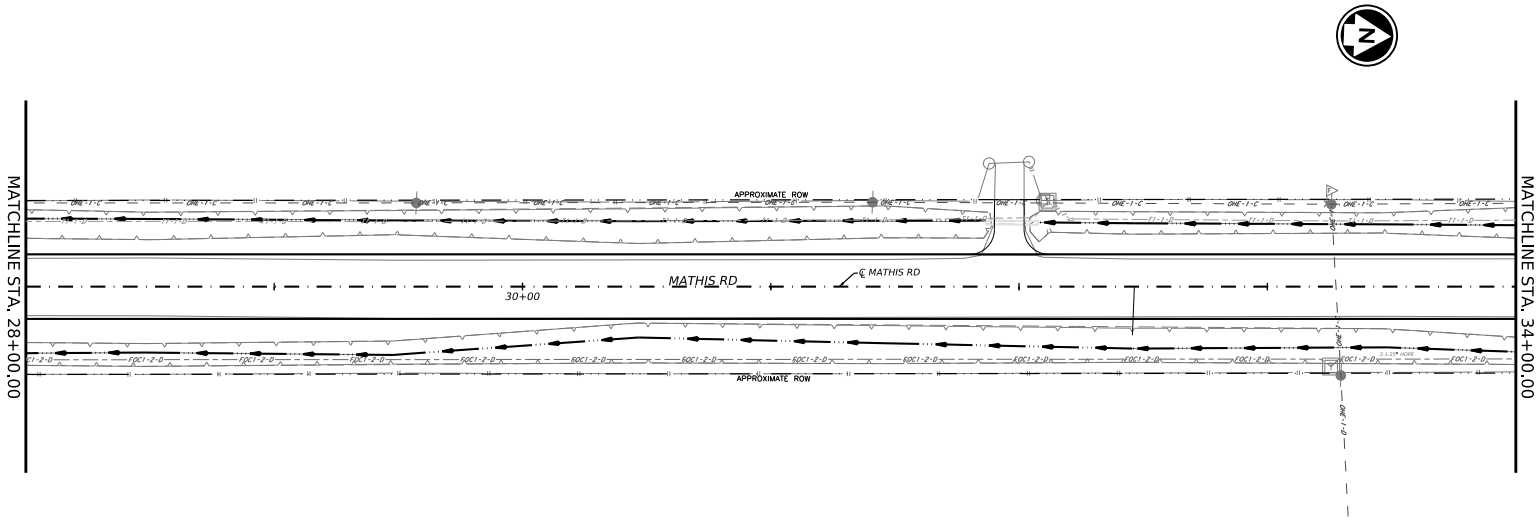
CobbFendley
TBPE F- No. 274 / TBPLS F-No. 10046700
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262 | www.cobbfendley.com

MATHIS ROAD
EXISTING UTILITY LAYOUT
BEGIN PROJ. TO STA. 22+00

DN: JLM	CONT.	SECT.	JOB	HIGHWAY
CK DN: LAG				MATHIS ROAD
DW: JLM	DIST	COUNTY		SHEET NO.
CK DW: LAG		WALLER		155

100% SUBMITTAL





STATE OF TEXAS
LISA A. GARNER
99375
LICENSED PROFESSIONAL ENGINEER
5/28/2026

0' 20' 40'
SCALE : 1"=40'

SHEET 3 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

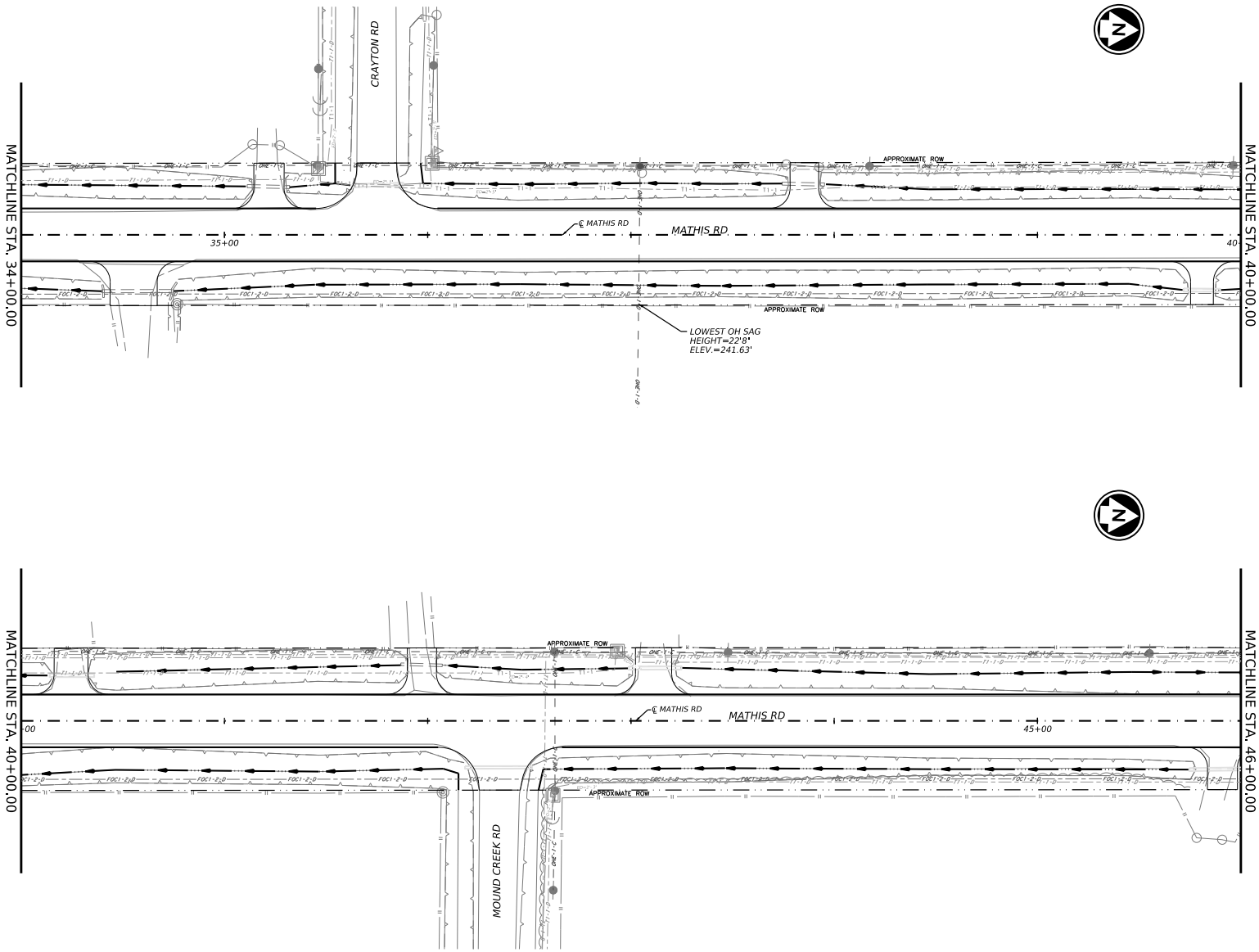
CobbFendley
TBPE F- No. 274 / TBPLS F-No. 10046700
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262 | www.cobbfendley.com

MATHIS ROAD
EXISTING UTILITY LAYOUT
STA. 22+00 TO STA. 34+00

DN: JLM	CONT.	SECT.	JOB	HIGHWAY
CK DN: LAG				MATHIS ROAD
DW: JLM	DIST	COUNTY		SHEET NO.
CK DW: LAG		WALLER		156

DATE: 5/28/2026 1:05:24 PM
FILE: D:\Projects\2025\06092 HR Green\01 Waller County-Mathis Rd\400 CAD\406 SUE\SUE Mathis Rd.dgn

100% SUBMITTAL



LISA A. GARNER
99375
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
5/28/2026

0' 20' 40'
SCALE : 1"=40'

SHEET 4 OF 12

DATE: 5/28/2026 1:05:25 PM
FILE: D:\Projects\2025\06092 HR Green\01 Waller County-Mathis Rd\400 CAD\406 SUE\SUE Mathis Rd.dgn

REV. NO.	DATE	DESCRIPTION	BY

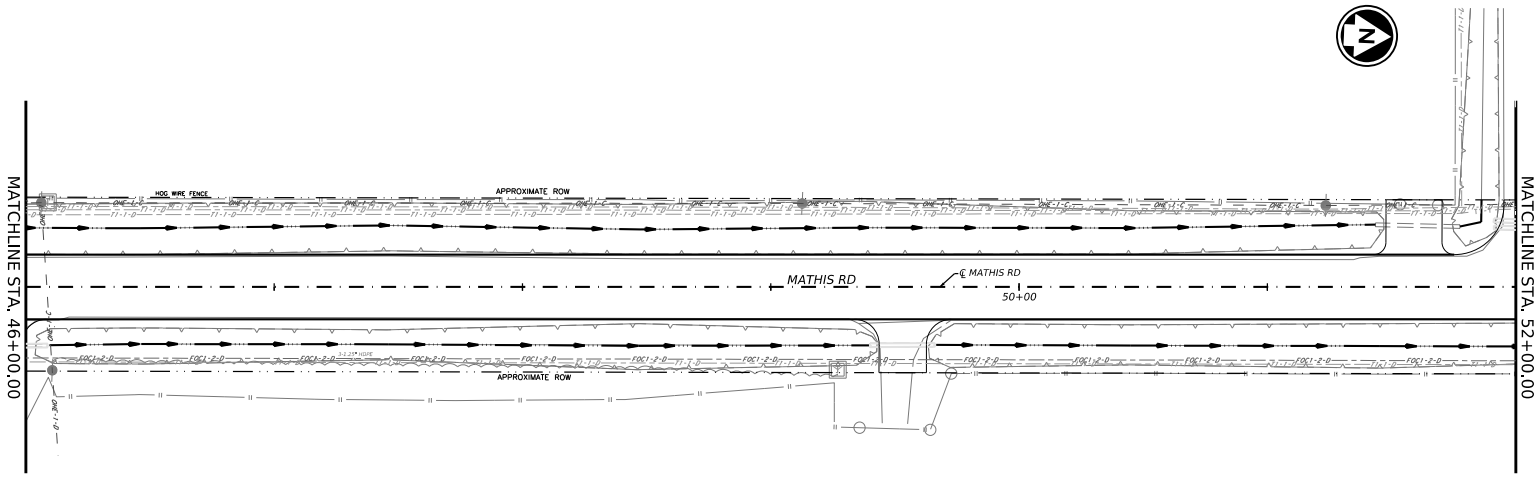
WALLER COUNTY ENGINEERING DEPARTMENT

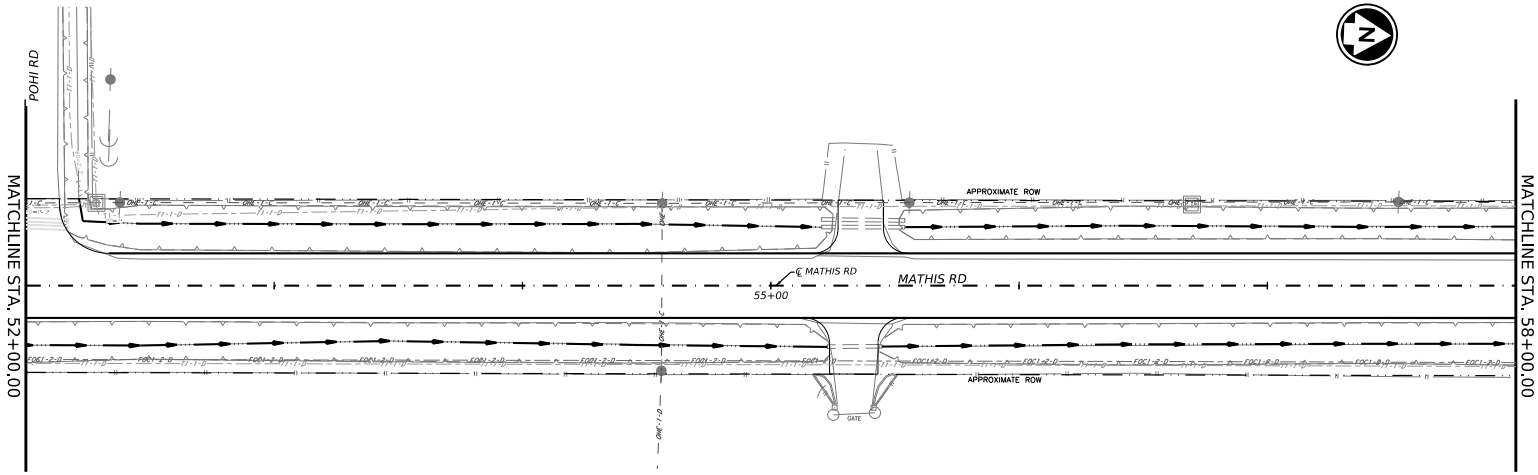
CobbFendley
TBPE F- No. 274 / TBPLS F-No. 10046700
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262 | www.cobbfendley.com

MATHIS ROAD
EXISTING UTILITY LAYOUT
STA. 34+00 TO STA. 46+00

DN: JLM	CONT.	SECT.	JOB	HIGHWAY
CK DN: LAG				MATHIS ROAD
DW: JLM	DIST	COUNTY		SHEET NO.
CK DW: LAG		WALLER		157

100% SUBMITTAL





STATE OF TEXAS
LISA A. GARNER
99375
LICENSED PROFESSIONAL ENGINEER
5/28/2026

0' 20' 40'
SCALE : 1"=40'

SHEET 5 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

CobbFendley
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13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262 | www.cobbfendley.com

MATHIS ROAD
EXISTING UTILITY LAYOUT
STA. 46+00 TO STA. 58+00

DN: JLM	CONT.	SECT.	JOB	HIGHWAY
CK DN: LAG				MATHIS ROAD
DW: JLM	DIST	COUNTY		SHEET NO.
CK DW: LAG		WALLER		158

DATE: 5/28/2026 1:05:26 PM
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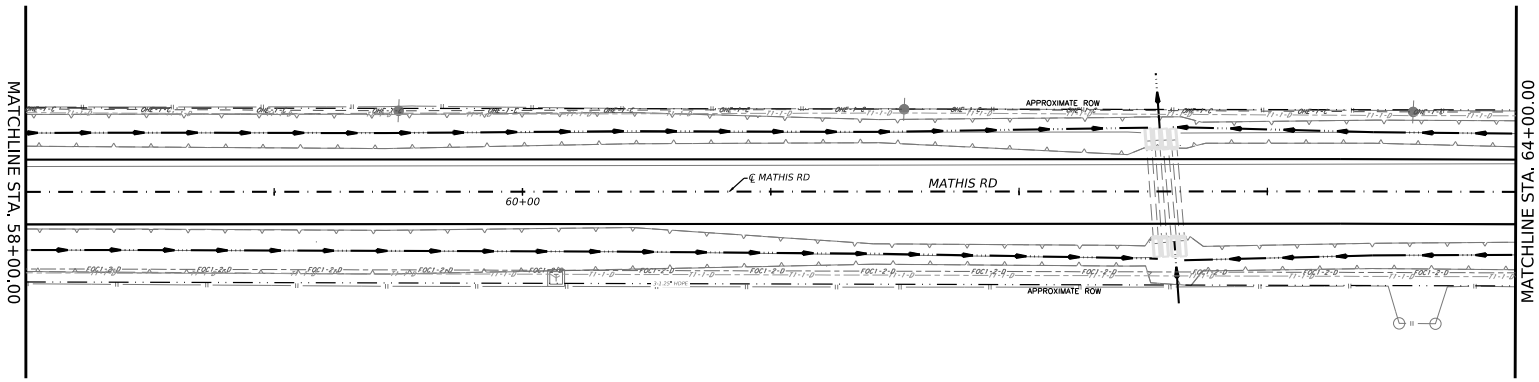
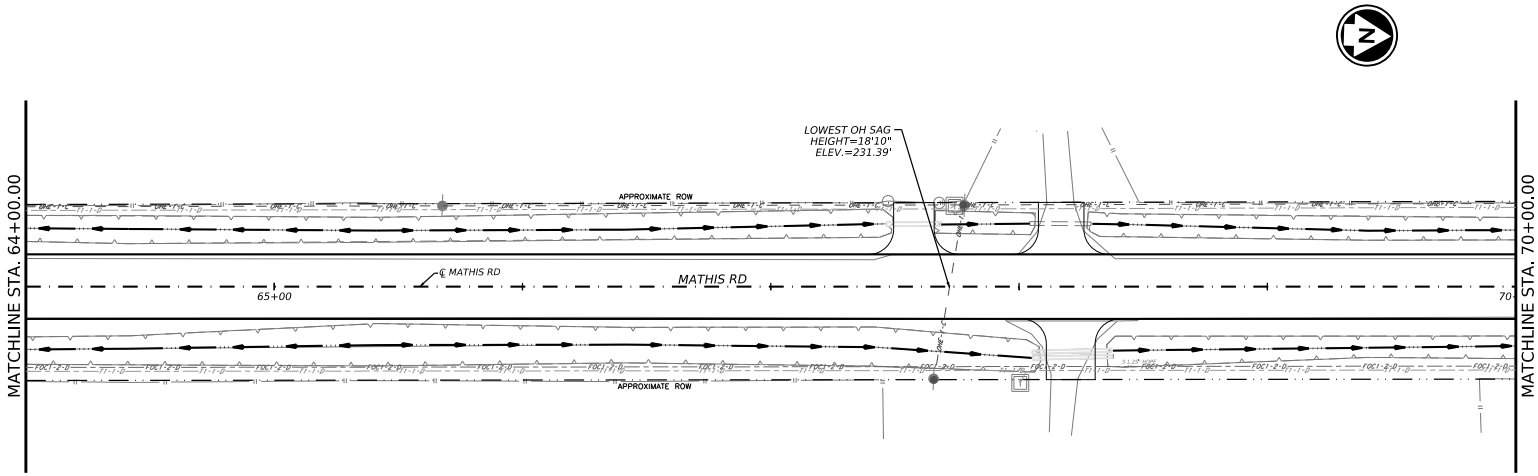
100% SUBMITTAL





STATE OF TEXAS
LISA A. GARNER
99375
LICENSED PROFESSIONAL ENGINEER
5/28/2026

0' 20' 40'
SCALE : 1"=40'

SHEET 6 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

CobbFendley
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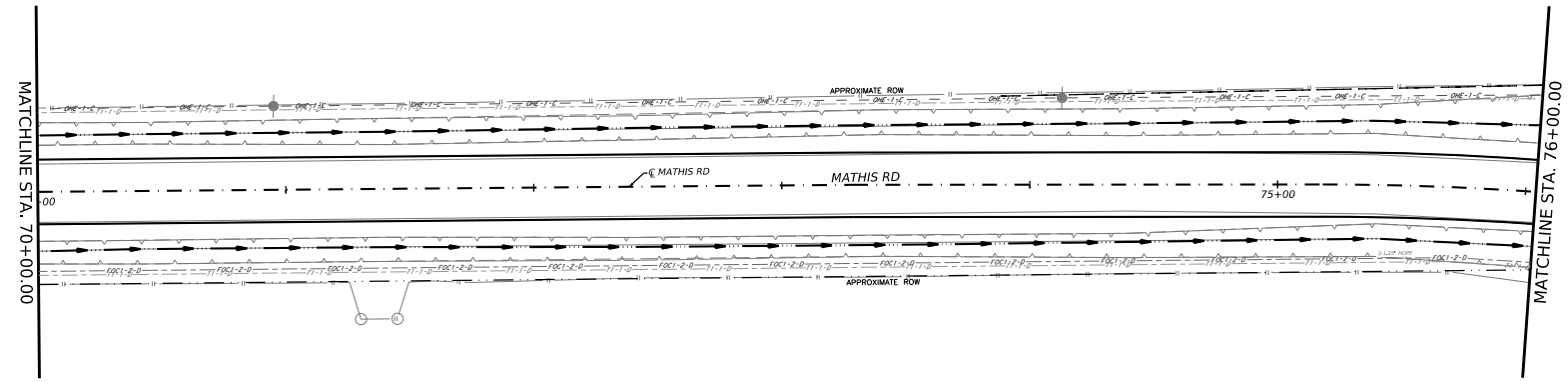
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262 | www.cobbfendley.com

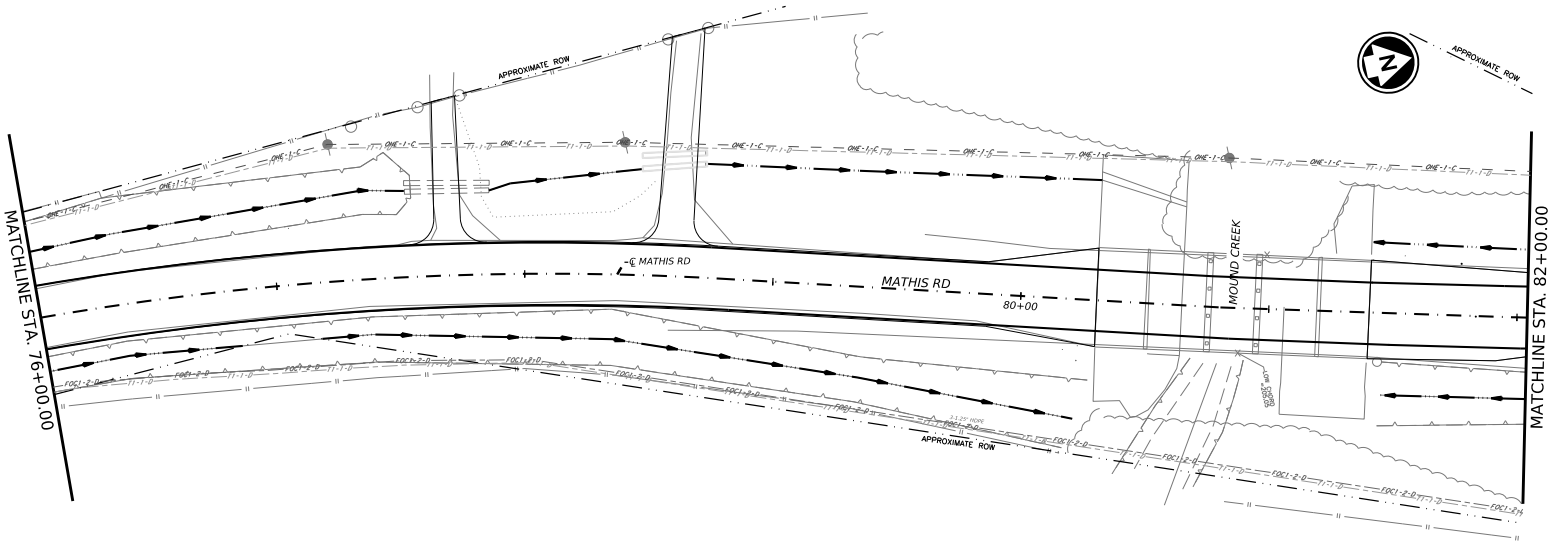
MATHIS ROAD
EXISTING UTILITY LAYOUT
STA. 58+00 TO STA. 70+00

DN: JLM	CONT.	SECT	JOB	HIGHWAY
CK DN: LAG				MATHIS ROAD
DW: JLM	DIST	COUNTY		SHEET NO.
CK DW: LAG		WALLER		159

DATE: 5/28/2026 1:05:27 PM
FILE: D:\Projects\2025\06092 HR Green\01 Waller County-Mathis Rd\400 CAD\406 SUE\SUE Mathis Rd.dgn

100% SUBMITTAL





LISA A. GARNER
99375
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
5/28/2026

0' 20' 40'
SCALE : 1"=40'

SHEET 7 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

CobbFendley
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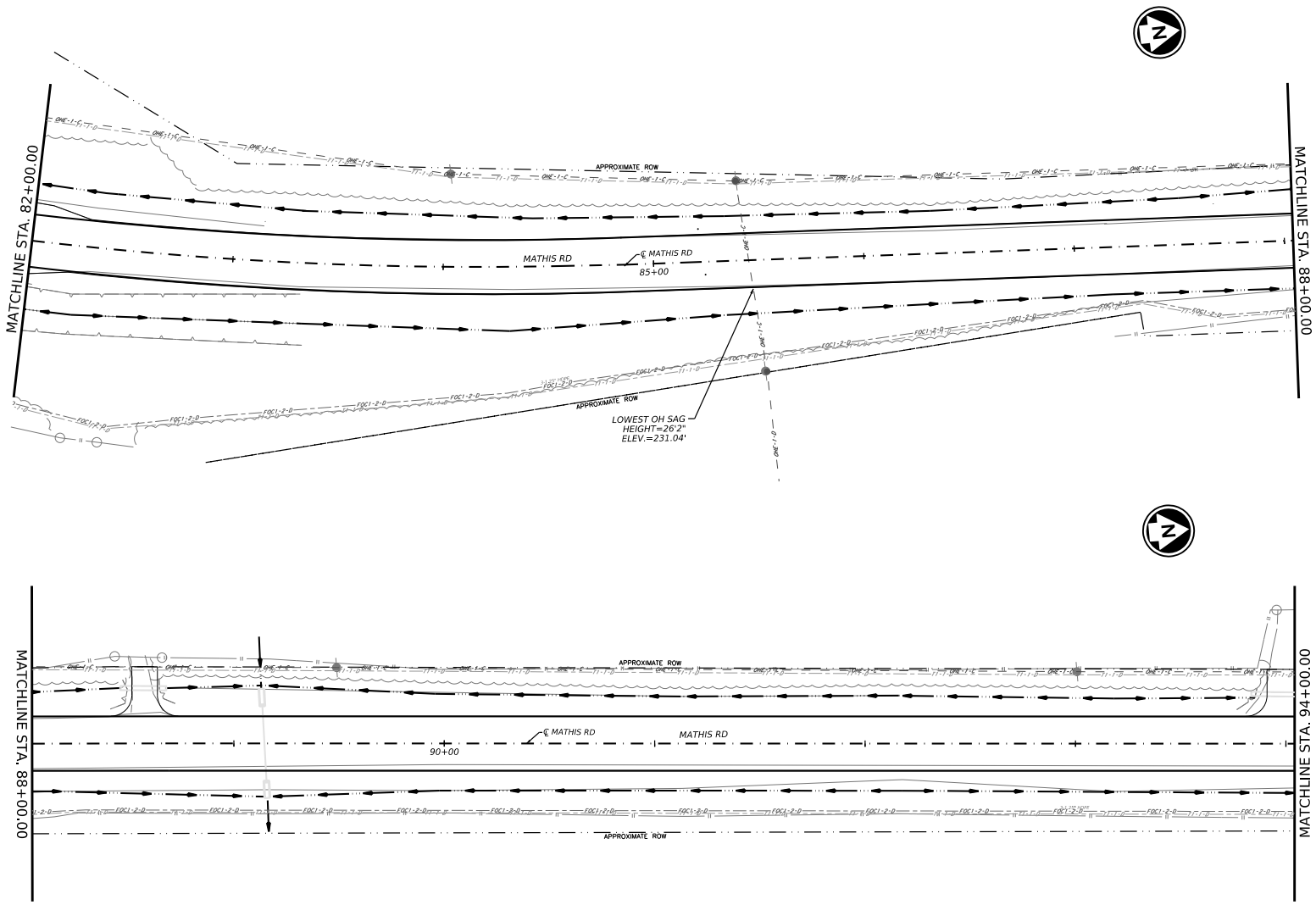
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262 | www.cobbfendley.com

MATHIS ROAD
EXISTING UTILITY LAYOUT
STA. 70+00 TO STA. 82+00

DN: JLM	CONT.	SECT	JOB	HIGHWAY
CK DN: LAG				MATHIS ROAD
DW: JLM	DIST	COUNTY		SHEET NO.
CK DW: LAG		WALLER		160

DATE: 5/28/2026 1:05:28 PM
FILE: D:\Projects\2025\06092 HR Green\01 Waller County-Mathis Rd\400 CAD\406 SUE\SUE Mathis Rd.dgn

100% SUBMITTAL



STATE OF TEXAS
LISA A. GARNER
99375
LICENSED
PROFESSIONAL ENGINEER
5/28/2026

0' 20' 40'
SCALE : 1"=40'

SHEET 8 OF 12

DATE: 5/28/2026 1:05:29 PM
FILE: D:\Projects\2025\06092 HR Green\01 Waller County-Mathis Rd\400 CAD\406 SUE\SUE Mathis Rd.dgn

REV. NO.	DATE	DESCRIPTION	BY

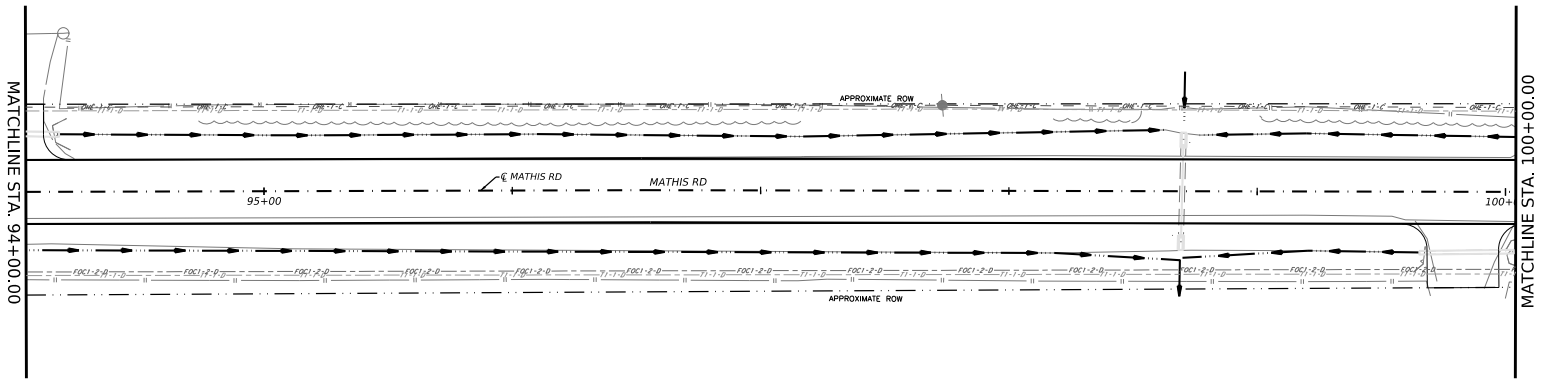
WALLER COUNTY ENGINEERING DEPARTMENT

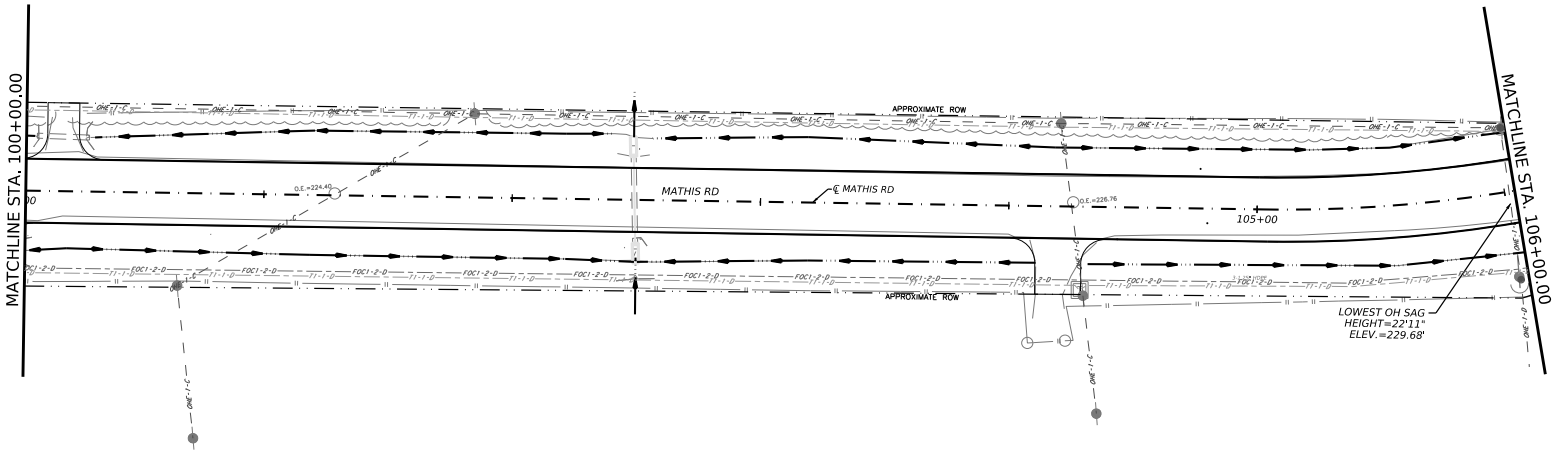
CobbFendley
TBPE F- No. 274 / TBPLS F-No. 10046700
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262 | www.cobbfendley.com

MATHIS ROAD
EXISTING UTILITY LAYOUT
STA. 82+00 TO STA. 94+00

DN: JLM	CONT.	SECT.	JOB	HIGHWAY
CK DN: LAG				MATHIS ROAD
DW: JLM	DIST	COUNTY		SHEET NO.
CK DW: LAG		WALLER		161

100% SUBMITTAL





STATE OF TEXAS
LISA A. GARNER
99375
LICENSED
PROFESSIONAL ENGINEER
5/28/2026

0' 20' 40'
SCALE : 1"=40'

SHEET 9 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

CobbFendley
TBPE F- No. 274 / TBPLS F-No. 10046700
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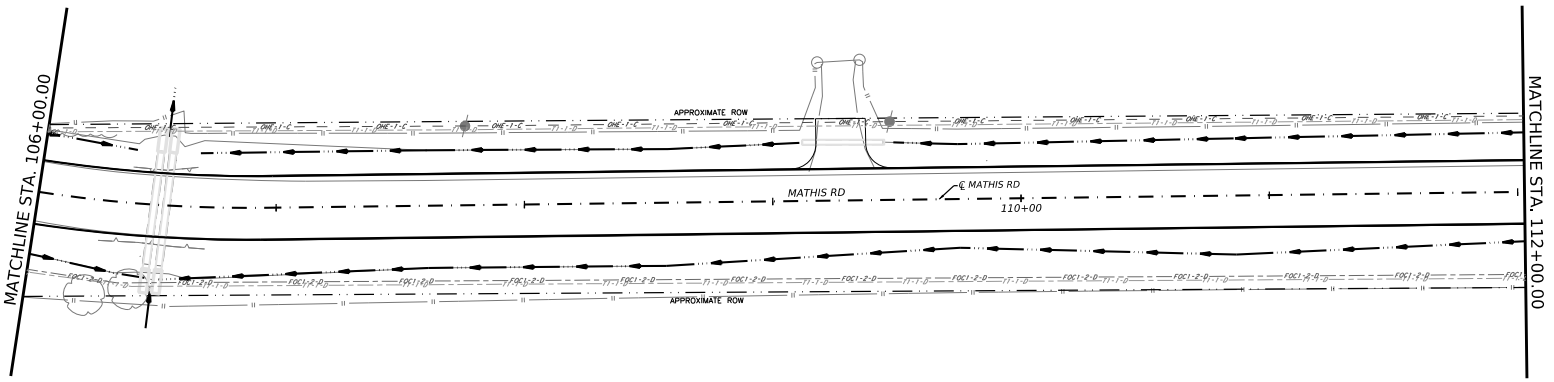
Houston, Texas 77040
713.462.3242 | fax 713.462.3262 | www.cobbfendley.com

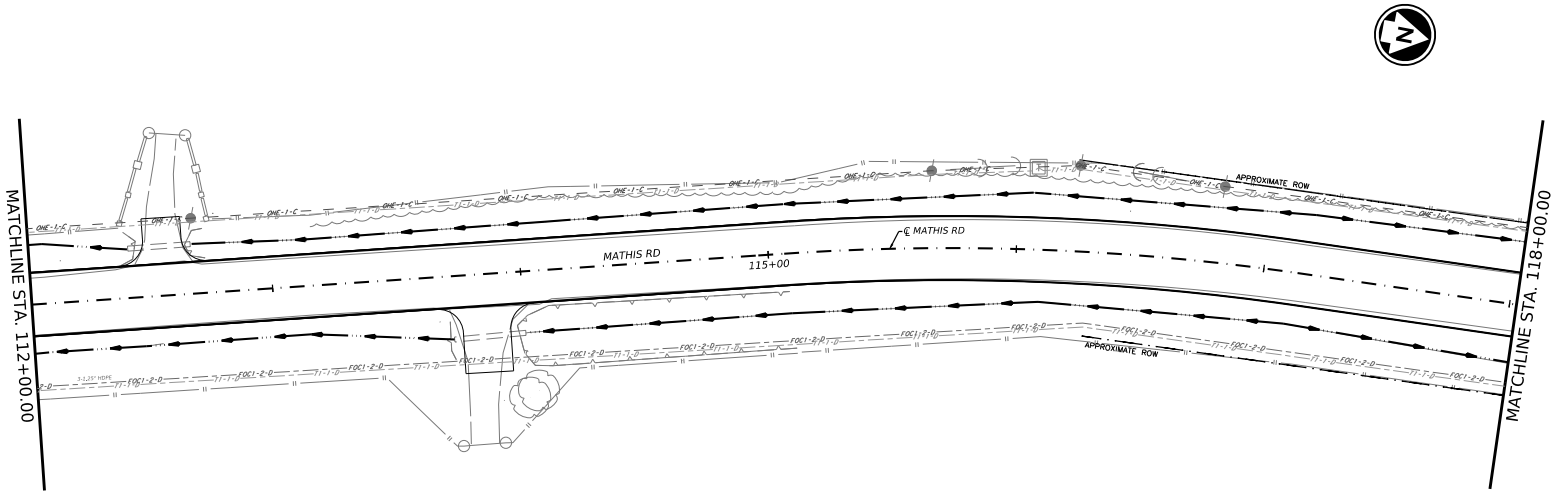
MATHIS ROAD
EXISTING UTILITY LAYOUT
STA. 94+00 TO STA. 106+00

DN: JLM	CONT.	SECT	JOB	HIGHWAY
CK DN: LAG				MATHIS ROAD
DW: JLM	DIST	COUNTY		SHEET NO.
CK DW: LAG		WALLER		162

DATE: 5/28/2026 1:05:30 PM
FILE: D:\Projects\2025\06092 HR Green\01 Waller County-Mathis Rd\400 CAD\406 SUE\SUE Mathis Rd.dgn

100% SUBMITTAL





LISA A. GARNER
99375
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
5/28/2026

0' 20' 40'
SCALE : 1"=40'

SHEET 10 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

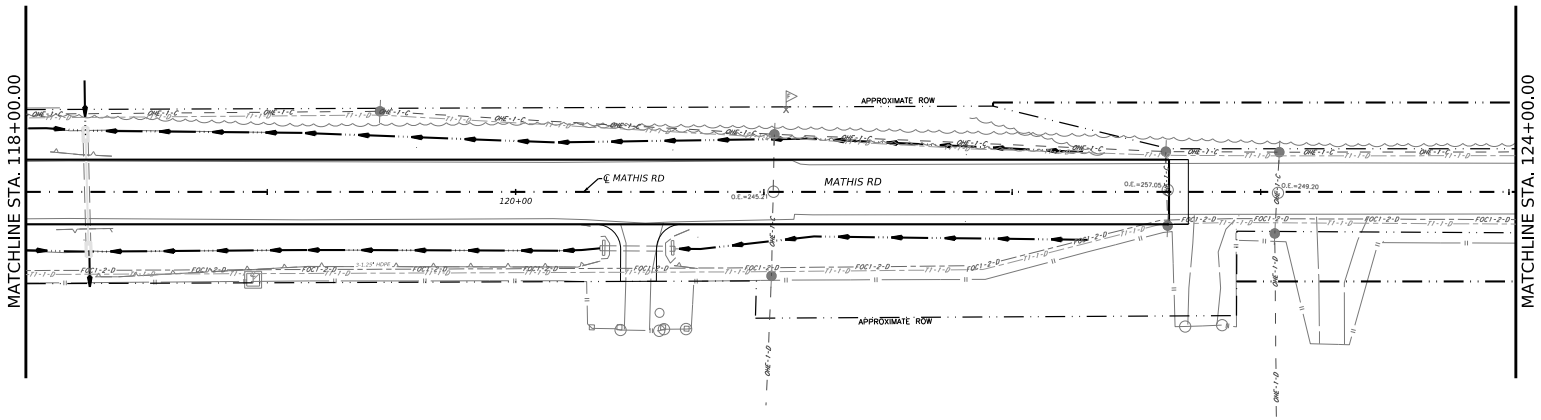
CobbFendley
TBPE F- No. 274 / TBPLS F-No. 10046700
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262 | www.cobbfendley.com

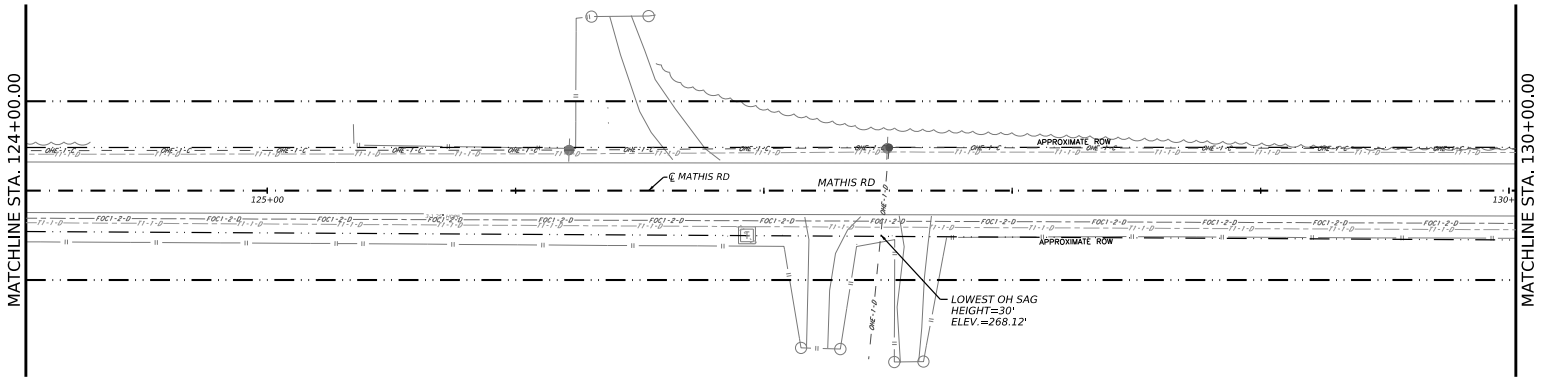
MATHIS ROAD
EXISTING UTILITY LAYOUT
STA. 106+00 TO STA. 118+00

DN: JLM	CONT.	SECT.	JOB	HIGHWAY
CK DN: LAG				MATHIS ROAD
DW: JLM	DIST	COUNTY		SHEET NO.
CK DW: LAG		WALLER		163

DATE: 5/28/2026 1:05:31 PM
FILE: D:\Projects\2025\06092 HR Green\01 Waller County-Mathis Rd\400 CAD\406 SUE\SUE Mathis Rd.dgn

100% SUBMITTAL





STATE OF TEXAS
LISA A. GARNER
99375
LICENSED
PROFESSIONAL ENGINEER
5/28/2026

0' 20' 40'
SCALE : 1"=40'

SHEET 11 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

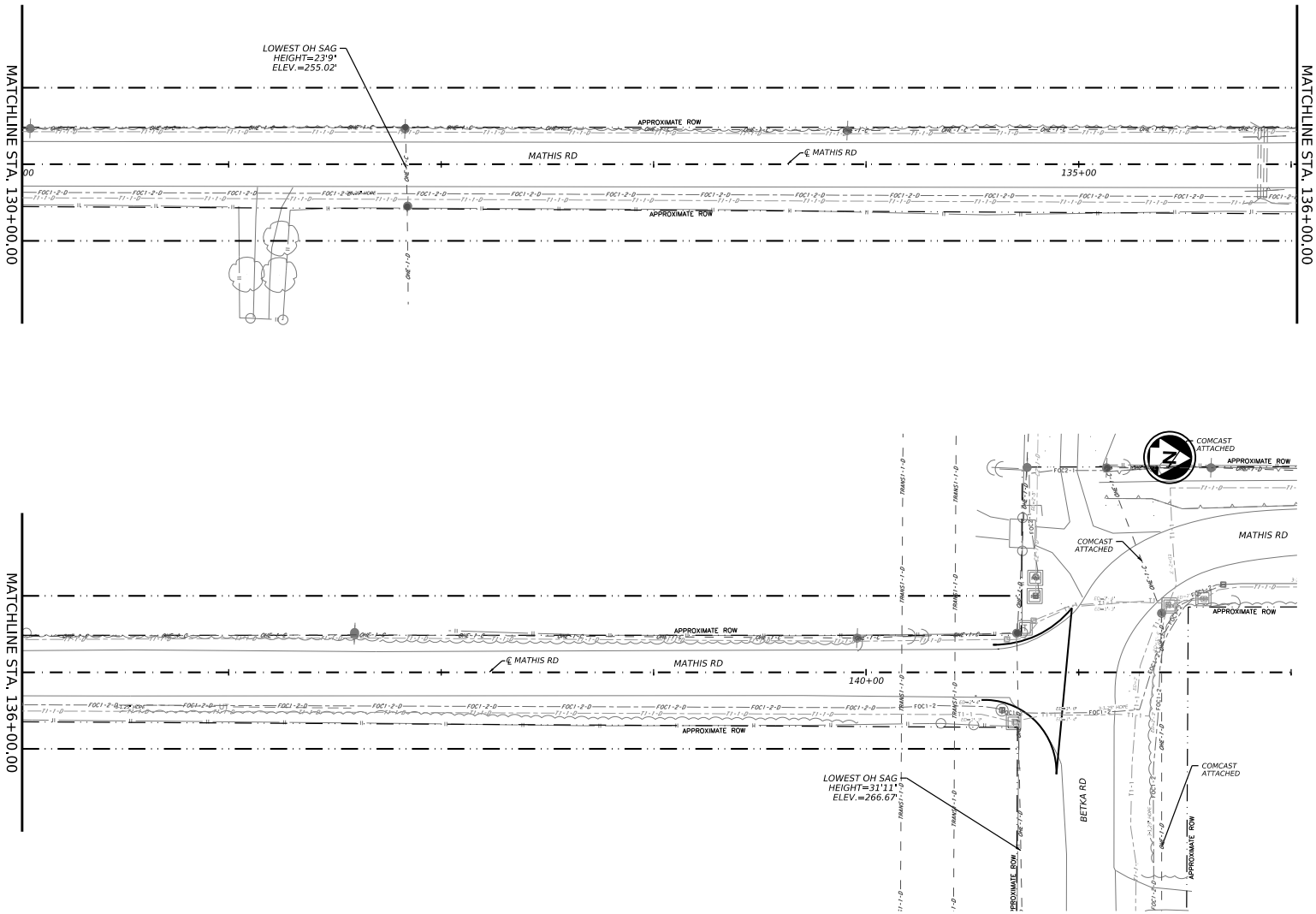
CobbFendley
TBPE F- No. 274 / TBPLS F-No. 10046700
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262 | www.cobbfendley.com

MATHIS ROAD
EXISTING UTILITY LAYOUT
STA. 118+00 TO STA. 130+00

DN: JLM	CONT.	SECT.	JOB	HIGHWAY
CK DN: LAG				MATHIS ROAD
DW: JLM	DIST	COUNTY		SHEET NO.
CK DW: LAG		WALLER		164

DATE: 5/28/2026 1:05:32 PM
FILE: D:\Projects\2025\06092 HR Green\01 Waller County-Mathis Rd\400 CAD\406 SUE\SUE Mathis Rd.dgn

100% SUBMITTAL



LISA A. GARNER
99375
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS
5/28/2026

0' 20' 40'
SCALE : 1"=40'

SHEET 12 OF 12

REV. NO.	DATE	DESCRIPTION	BY

WALLER COUNTY ENGINEERING DEPARTMENT

CobbFendley
TBPE F- No. 274 / TBPLS F-No. 10046700
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262 | www.cobbfendley.com

MATHIS ROAD
EXISTING UTILITY LAYOUT
STA. 130+00 TO END PROJ.

DN: JLM	CONT.	SECT.	JOB	HIGHWAY
CK DN: LAG				MATHIS ROAD
DW: JLM	DIST.	COUNTY		SHEET NO.
CK DW: LAG		WALLER		165

DATE: 5/28/2026 1:05:33 PM
FILE: D:\Projects\2025\06092 HR Green\01 Waller County-Mathis Rd\400 CAD\406 SUE\SUE Mathis Rd.dgn